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United States  
Court of Appeals  
For the Ninth Circuit.

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JESSE E. HALL, WEATHERFORD OIL TOOL COMPANY, INC., a Corporation; WEATHERFORD SPRING COMPANY OF VENEZUELA, C.A., a Corporation; HALL DEVELOPMENT COMPANY, C.A., a Corporation; WEATHERFORD, LTD., a Corporation; WEATHERFORD INTERNACIONAL, S.A., DE CV., a Corporation; NEVADA LEASEHOLD CORPORATION, a Corporation; PARKER INDUSTRIAL PRODUCTS, INC., a Corporation,

Appellants,

vs.

KENNETH A. WRIGHT and B & W, INC., a Corporation,

Appellees.

KENNETH A. WRIGHT and B & W, INC., a Corporation,

Appellants,

vs.

JESSE E. HALL, WEATHERFORD OIL TOOL COMPANY, INC., a Corporation, et al.,

Appellees,

Transcript of Record  
In Nine Volumes

Volume V  
(Pages 2001 to 2504)

Appeals from the United States District Court for the  
Southern District of California,  
Central Division.

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(Deposition of William A. Doble.)

Q.220: What does that mean with respect to the rotation of this scratcher?

A. That the scratcher would rotate against a force of 30 ounces at a three—one and three-quarters radius.

Q.221: Why do you say “one and three-quarters radius”?

A. Which is half the diameter of the scratcher body. It is three and a half, I may have figured that wrong.

Q.222: One and three-quarters is half of three and a half, I will take your word for it. You mean by one and three-quarters then that is the length of the lever arms through which the force is operated; is that correct?

A. That is true. Yes, I believe that the sideways thrust at the reversal point is a factor or a value very much higher than an ounce, but whatever it is it is multiplied substantially 30 times. All wires will not have exactly the same thrusting value, but I would say it would be approximately 30, because there are 30 wires, and assuming they all operated to the same degree in sideways thrust, you would get 30 times the [2642-70] thrust of any one wire.

Q.223: That is, there are 30 wires in the scratcher of Exhibit NN?

A. Yes.

Q.224: But in the scratcher like Applicant's Exhibit 2, and the corresponding scratcher shown, for example, in Exhibit YY, there are 50 wires, I believe?

A. That is correct.

(Deposition of William A. Doble.)

Q.225: So that the factor in that case would not be 30, would it?

A. It would not be 30, it would be 50, and it would operate through a very much greater lever arm, because the diameter of the scratchers which you have referred to, Applicant's Exhibit 2 and Petitioner's Exhibit YY, is five and a half inches in diameter, and that would give you a two and three-quarter-inch lever arm, which in turn represents a very much higher rotational force acting to rotate the body portion of the scratcher with relation to the casing upon which it is mounted.

Q.226: Now, Mr. Doble, you have here in the room——

A. I might point out, Mr. Lyon, also, that that sideways motion I referred to as the scratcher entered the bore of the cylinder is very clearly depicted in Petitioner's Exhibit ZZ by the angle line that extends downwardly from the top surface of the flange and [2642-71] the line from the very top. It swings downwardly to the right and then slightly to the left and then makes a straight line. That is the adjustment of the scratcher itself to the compressing of the wires into a slightly smaller bore, and it causes some rotation, as is observed there in that particular portion of the exhibit.

Q.227: Now, Mr. Doble, I hand you another pair of photographs, on the flange of which there is marked in each case a "2," numeral "2," and I will ask if you can identify these photographs? If you can, will you tell me what they are?

(Deposition of William A. Doble.)

A. Yes.

Q.228: Were you present when they were taken?

A. I was not present when these photographs were taken. However, I directed the manner in which they should be taken, and they were taken by the same photographer, that is, Mr. Beans Lyon of Photography Unlimited, and were taken of a cylinder which I had directed the preparation of and had taken out to the studio of the Photography Unlimited.

Q.229: You mean you had taken the two halves of the cylinder shown in these two photographs to the studio? A. Yes, sir.

Q.230: For the purpose of having the [2642-72] pictures taken? A. Yes.

Q.231: And had previously instructed the manner in which the pictures were to be taken?

A. Yes.

Q. 232: And then the pictures were delivered to you? A. Yes, sir.

Q.233: Of what are these two pictures taken?

A. These two pictures are taken of a large cylinder. It was nine and I believe five-eighths inches in diameter, that is, the internal diameter. The cylinder was constructed so that it could be taken apart, so that you have two halves. One half is represented in each of the photographs. The inner surface and a slight portion of the flanges was painted with the same black show card paint. The cylinder was assembled, dowel pins were put in to insure correct measurement. The cylinder was then

(Deposition of William A. Doble.)

painted. The paint was permitted to dry. The cylinder was mounted in the testing machine of Petitioner's Exhibit KK and others we have previously referred to, and a scratcher substantially identical to Applicant's Exhibit 2 was placed in the machine.

Q.234: Where was that scratcher obtained from?

A. That scratcher was obtained from stock, out of stock at the warehouse or plant of the [2642-73] B & W Company in Long Beach. The scratcher was mounted on a test apparatus, was operated to cause two full reciprocations, in other words, four strokes, after which the scratcher was removed, the cylinder was removed from the test stand, taken apart, and brought up to the studio of the Photography Unlimited for the taking of pictures.

Q.235: As far as you could tell was there any difference whatsoever between the scratcher used in this test and Applicant's Exhibit 2?

A. No; there wasn't, as far as I could tell. I examined both rather carefully. As far as I could tell they were identical.

Q.236: These two photographs then are photographs of what?

A. These are photographs of the path scribed of each of the wires of the scratcher similar to Applicant's Exhibit 2 through two full reciprocations, so that the free ends of the wires scratched or scribed on the inner surface of the cylinder the path they traveled during those two reciprocations. I would have taken more reciprocations in the several ex-

(Deposition of William A. Doble.)

periments, excepting that there would then be so many lines it would be hard to distinguish the path of one wire from another, so in most cases I limited the travel or the reciprocations to two full reciprocations, so that we could identify as [2642-74] nearly as possible the path of each wire. Now, putting these two together and comparing these two photographs there, the character at the lower end of each of the scribed lines, that is where the scribed lines traverse sideways from the vertical. If we could identify these photographs with an exhibit number——

Mr. Lyon: I am going to do that right now. I will ask that the two photographs identified by the witness be received in evidence as Petitioner's Exhibits AAA-1 and AAA-2, and I will ask that they be marked as I have marked them, AAA-1 and the other photograph as AAA-2.

(Photographs referred to were marked by the Notary Public as Petitioner's Exhibits AAA-1 and AAA-2, respectively, and made a part of this deposition.)

Q.237: (By Mr. Lyon): Now, proceed, Mr. Doble.

A. Referring again to the photographs which you have handed to me, and pointing out first in Petitioner's Exhibit AAA-1 the rather sharp abrupt character of the sidewise travel of the ends of the wires in the lower portion of the stroke as compared to the more or less rounded or smooth side-

(Deposition of William A. Doble.)

ways travel of the wires appearing here on the right-hand half of Petitioner's Exhibit AAA-2. In each instance, or in each of these exhibits it will be noted that there are both characters [2642-75] of sidewise movement of the wires, clearly illustrating all of the wires do not travel in exactly the same manner when the reversal takes place.

Q.238: State whether or not it is true, Mr. Doble, that each wire on each of these exhibits had its own independent handwriting?

A. That is correct. In this cylinder I particularly noted the rotation at the end of the first stroke. It was three-eighths of an inch at the end of the first reciprocation. It was three-eighths of an inch, and at the end of the second rotation the scratcher moved one-quarter of an inch further, making a total rotation of five-eighths of an inch.

Q.239: In two strokes?

A. In two strokes.

Q.240: Will you take this photograph and trace in Exhibit AAA-2 a line traced by one wire. It might be well to mark at the upper edge of the photograph just where you start, just the word, "Start."

A. I am trying to pick out a wire that is very clear, and not—that is, a wire scratch mark that is clear and does not overlap one of the other wire scratch marks. I will mark the start of a wire which is almost in the central portion of the photograph Petitioner's Exhibit AAA-2. Now, shall I put little ink [2642-76] marks across?

(Deposition of William A. Doble.)

Q.241: No. See if you can mark at the bottom just the word "Bottom" of that same wire, and then up on the next stroke the word "Up" at the top of it. Can you?

A. Well, I will mark down here the bottom of it, where it starts up.

Q.242: I see.

A. It comes down, loops over to the right and progresses upwardly, and overrides one of the other lines scribed on the cylinder, and I will mark the upper end "Upper End." It then progresses downwardly, and two wires appear to be overlapping at this particular point to the bottom where I will mark another "Bottom."

Q.243: Bottom 2.

A. "Bottom 2," and then comes up.

Q.244: Then mark the word "Out."

A. I will mark the word "Out." It is not too clear, just the "Out" part, because the two lines sort of overlapped, but I have marked the point where I believe it came out, although I might be——

Q.245: You are not certain of the tracing of the last line?

A. Well, I am not too—I have marked it over to the one that sort of wiggles up near the [2642-77] top as "Out." I think that is where that particular wire came out.

Q.246: The magnitude of the distance between the two parallel paths is indicative of what, Mr. Doble?

A. Indicative of the rotation of the body of the



(Deposition of William A. Doble.)

scratcher around the reciprocating drum "18," and if proper proportions were taken into consideration for the photograph they would appear to be approximately three-eighths of an inch, because that was the rotation which I noticed on the collar for the first reciprocation.

Q.247: Now, Mr. Doble, you have produced, or there has been brought into this room two half cylinders? A. Yes, sir.

Q.248: I will ask you to place those up here, and tell me what they are. You have produced two half cylinders, Mr. Doble. What are they?

A. These are the cylinders from which Petitioner's Exhibits AAA-1 and AAA-2 were made, that is, these cylinders were photographed, and those photographs are the Petitioner's Exhibits AAA-1 and AAA-2.

Q.249: This poster paint that is on here is quite easily removed, is it not, Mr. Doble?

A. It is, soft and chalky like.

Mr. Lyon: We will have to request everyone to keep [2642-78] their fingers off of it.

The Witness: Also that the bright metal surface has a tendency to rust, and moisture from the finger might cause the bright lines as they now appear to become rusty.

Mr. Lyon: I will ask that these two cylinders be marked as the Petitioner's Exhibits BBB-1 and BBB-2 for identification.

I might explain that in the marking of these things for identification instead of offering them in



Deposition of William A. Doble.)

vidence that I am doing that with the purpose and  
ntent of producing the devices at the final hearing,  
ut I believe that they would be better preserved  
n my custody than perhaps in the Patent Office's  
ustody, and unless the Applicant's counsel has an  
bjection, that they may be retained in my custody.  
n each case photographs of the articles I have  
ffered in evidence. Have you any objection?

Mr. Scofield: Let me first understand what these  
wo halves of the cylinders are. Are these supposed  
o be photographed in Exhibits AAA-1 and AAA-2?

Mr. Lyon: Correct.

Mr. Scofield: They are the photographs?

The Witness: Correct.

Mr. Scofield: Well, I have no objection [2642-79]  
o you keeping them in your custody, as far as I  
m concerned.

(Articles referred to were marked by the  
Notary Public as Petitioner's Exhibits BBB-1  
and BBB-2, respectively, for identification, and  
thereupon returned to Mr. Lyon.)

Q.240: (By Mr. Lyon): Mr. Doble, with re-  
spect to these cylinders, and also with respect to the  
photographs AAA-1 and AAA-2, the cylinders being  
BBB-1 and BBB-2, I notice that the scratched lines  
start on an inclined upslope. Can you explain that?  
Why don't they all start at the same point?

A. I can explain that very simply by referring  
o Applicant's Exhibit 2. It will be noted that the

(Deposition of William A. Doble.)

wires each are in banks of 10. There are five banks, and each bank progresses from adjacent the upper edge of the scratcher body downwardly to approximately the lower edge of the scratcher body. It is a progressive series of wires which are spirally related to the body of the scratcher.

Q.251: Now, Mr. Doble, in these scratchers that you have tested, will you state how the wires are attached to the collars? Are they attached firmly or flexibly or in what manner?

A. You are referring to Applicant's [2642-80] Exhibit 2 and Petitioner's Exhibit M and Petitioner's Exhibit UU and Petitioner's Exhibit A. Yes, the wires, all of those wires are flexibly mounted on the body portion of each of the scratchers.

Q.252: That is, they are flexibly attached to the rings?

A. Yes, that is correct, quite flexibly attached to it.

Q.253: Do each of those wires have a sidewise inclination with respect to the extended radius of the collar?

A. May I have that question?

(The question was read by the reporter.)

The Witness: Yes, to more or less. As we view the different scratchers we have here referred to, for example, in Petitioner's Exhibit M, there is a very marked sidewise direction or inclination of the wire, whereas in Applicant's Exhibit 2 there is a lesser sidewise inclination of the wire.

(Deposition of William A. Doble.)

Q.254: Will you set forth where the sidewise inclination of the wire in Exhibit 2 is found?

A. That is really difficult, Mr. Lyon, because they are not all exactly the same.

Q.255: I didn't say the amount. What I said was: Where is it found? [2642-81]

A. Oh, it is found where the portion of the wire which is bent approximately to correspond to the outer periphery of the body portion of the scratcher engages the periphery of the scratcher. In most cases it is a considerable distance toward the anchor point from where the wire projects outwardly between one of the guide bars.

Mr. Lyon: Read the answer.

(The answer was read by the reporter.)

Mr. Scofield: Read the question now.

(The question was read by the reporter.)

Q.256: (By Mr. Lyon): I am handing you a wire, Mr. Doble, and ask you if you will compare that wire with the wires of Exhibit 2.

A. Yes, sir.

Q.257: You have done it? A. I have.

Q.258: How does it compare and how does it differ?

A. Well, it differs very slightly and immaterially at the end which projects through one of the guide bars, and the bend is not quite as sharp as shown in Applicant's Exhibit 2. It appears to have closely the same radius for the arcuate part which extends

(Deposition of William A. Doble.)

from the attaching end, which I previously referred to, to the radius of the bend from which the wire extends at an [2642-82] angle from the arcuate portion.

Q.259: The straight portion is longer, too, in the wire I gave you?

A. Yes, sir; that is correct, and not bent up at its free end.

\* \* \*

Q.261: (By Mr. Lyon): These wires were made of spring steel? A. Yes.

Q.262: And when you form an article from spring [2642-83] steel you have to form them beyond the desired point and expect them to return to it; isn't that correct?

\* \* \*

Q.263: (By Mr. Lyon): Observing the wire in Applicant's Exhibit 2, do you find the wires identical in Exhibit 2? There are 50 wires there.

A. Yes, they are identical; well, with slight differences, due to the character of the wires. Spring wire is a rather cranky material to deal with, and there are little variations in the angle from which the wires project from the body portions of the scratcher.

Q.264: State whether those differences are or are not the differences that you would expect as a mechanical engineer in wires of this character made of spring steel, even though made from the same die?

A. That is correct. Our scratchers which we have

(Deposition of William A. Doble.)

before us are the same way. There is a certain degree of difference in each of the wires from each other.

Q.265: Now, my previous question, the one that you [2642-84] could not understand and Mr. Scofield——

Mr. Scofield: All counsel could not understand.

Q.266: (By Mr. Lyon): ——is merely: Are the deviations in the separate wire that I hand you greater or less than you would expect in the wire, even though it had been made from the same die as the wires in Exhibit 2?           A. No.

Mr. Scofield: I object to that as calling for a conclusion of the witness.

The Witness: Such difference as there is is minor, and might be expected in handling a piece of spring steel such as the wire which you have handed me.

Q.267: (By Mr. Lyon): In stating your fact that Exhibit 2 wires had a sidewise inclination, you refer to a particular bend in the formation of that wire as the point of that deviation or the sidewise inclination. Can you more easily illustrate that point from the separate wire that I hand you?

A. Yes. I can define that point as being located between the arcuate section of the wire and the straight portion of the wire bent on a radius from that arcuate portion.

Mr. Scofield: Would you read that question and answer, please?

(Deposition of William A. Doble.)

(The record was read by the [2642-85] reporter.)

Mr. Lyon: I will offer the wire, which the witness just used in his last answer, in evidence as Petitioner's Exhibit CCC. [2642-86]

\* \* \*

Q.272: Mr. Doble, I hand you a photograph showing a ring and two wires, one wire which is like the wire, Exhibit CCC, and one wire of which has a double bend in it after it leaves the point spaced away from the ring, the two points of the wires at their outer end coming to approximately the same point spaced from the ring. Assuming that the first wire, the one with the double bend, the one portion extending coincidental with a radius extending from the ring, would there be any difference in resultant effect were a thrust imposed upon the end of the two wires? A. No.

Mr. Scofield: I object to that as calling for a conclusion. There has been no foundation laid for the hypothetical case that has been proposed to the witness. Insofar as my recollection serves me there is nothing in this record to indicate or show what those forces might be or are.

Q.273: (By Mr. Lyon): Your answer is "No"?

A. That is correct. I have already answered.

Q.274: Explain why.

A. Because the thrust is applied to the free ends of the wires in substantially the same location with [2642-89] relation to the center of the cylinder about which the wires are placed, and each of the

(Deposition of William A. Doble.)

wires extends angularly from an extended diameter of the collar, so that in each case you get the same effective lever arm upon which this thrust acts, so that the same forces would be applied to its endeavor to shift or rotate the cylinder, whether you used the wire with the straight portion extending from the periphery of the collar or the wire having the bend in the two straight portions as it extends from the collar.

Mr. Scofield: I further object to the question and answer again, that there is no showing as to how these two wires or either are fulcrumed to the collar, nor how the force is imposed at the end of the wire.

Q.275: (By Mr. Lyon): Now, Mr. Doble, taking Exhibit M, in Exhibit M you have a wire having two straight portions connected with a bend after the wire has left the collar; is that true?

A. That is true, sir.

Q.276: In that respect they are somewhat similar to the two wires in the photograph I have before you?

Mr. Scofield: That is objected to as leading.

Q.277: (By Mr. Lyon): Isn't that correct?

A. Yes, that is correct.

Q.278: The question is: Would it make any difference at all in the operation of Exhibit [2642-90] M if a wire was extended from the point where the bent wire leaves the periphery out to the same point and same welded button on the end as is accomplished by the double bend of the wire in Exhibit M?

(Deposition of William A. Doble.)

The Witness: There would be no difference in the effect of applying the pressure on the end of either of the wires. In fact, it does not make any difference how many bends are placed in the wire, as long as it finally reaches the same point at which the pressure is applied upon the straight wire. The mechanical forces would be identically the same.

Mr. Lyon: I will ask that the photograph used by the witness showing the two wires be received in evidence as Petitioner's exhibit next in order.

\* \* \*

Q.279: (By Mr. Lyon): Mr. Doble, in making tracings, [2642-91] wire tracings of the different scratchers to determine their relative rotation and rotative effect, did you make such tracings of scratchers other than those illustrated by Exhibits AAA-1 and ZZ, and in that regard I will hand you a set of pictures, and ask you if you can identify those?

A. Yes; the two photographs which you have handed me I can identify as photographs of the two halves of a cylinder which was used in the test machine to trace the lines of a Nu-coil type of scratcher.

Q.280: What size?

A. Three and a half inch.

Q.281: Will you just explain fully what these photographs show and what was done in this test? First, let me ask you, do these photographs indicate the two halves of the cylinder of the same test?

A. Yes, they do.



(Deposition of William A. Doble.)

Q.282: The test that was performed under your supervision? A. Yes.

Mr. Lyon: I will ask that the two photographs be received in evidence as Petitioner's Exhibits EEE-1 and EEE-2.

(Photographs referred to were marked by the Notary Public as Petitioner's [2642-92] Exhibits EEE-1 and EEE-2, respectively, for identification, and made a part of this deposition.)

Mr. Scofield: I will object to the offer unless some explanation is made as to the pertinency of this pattern shown here made by a Nu-coil scratcher. I don't see that it has any relationship to the issues in the proceeding in which these depositions are being taken.

Q.283: (By Mr. Lyon): Let me ask you this question before you start to answer: Where was the Nu-coil scratcher obtained from that was used in this test?

A. From the stock contained in the warehouse of the B & W Company in Long Beach.

Q.284: That was a regular Nu-coil taken out of stock then?

A. Yes, sir. The two halves of the cylinder shown in Petitioner's Exhibits EEE-1 and EEE-2 are provided with side flanges. The cylinder was assembled together by means of the side flanges, bolts and taper pins to insure the proper alignment of the two halves. The flange portion of the cylinder was

(Deposition of William A. Doble.)

mounted upon the annular ring "4" of the test stand——

Q.285: Shown in Exhibit N?

A. ——shown in Petitioner's Exhibit LL, in the manner shown there and in Petitioner's Exhibit KK, and was secured, mounted therein by means of the stud "17" and [2642-93] wing nuts "25." Before the cylinder was mounted in the test stand, however, the internal surface of the cylinder was cleaned from a previous operation of the paint which was at that time upon the inner surface of the cylinder, and was ground out to make it perfectly smooth. Thereafter the cylinder was repainted, allowed to dry, and mounted in the test stand as I have previously stated.

Q.286: What paint was used?

A. The same type of paint was used in all of the tests which we have referred to so far, namely, the kind that is sold in the stationery stores for show card or show poster work. It is black, has a black dull finish. The Nu-coil scratcher, Petitioner's Exhibit UU, was mounted on the reciprocating drum "18" in the manner previously described, so that it was provided with a limited reciprocatory motion on the drum "18" and was free to rotate on the drum. The next operation was to adjust the black line which appears on the side face of the Nu-coil scratcher in register with the zero mark on the graduations of the stop collar "21." The pin "14" was removed from the front leg of the test

(Deposition of William A. Doble.)

stand to permit the operating handle "12" to be actuated. The first movement of the handle——

Q.287: Before you do that, how was the [2642-94] drum positioned, the drum "18" in this?

A. The drum "18" was mounted upon the reciprocating rod, square reciprocating rod "8," and was locked against rotation by means of the lock screw "19" so that the reciprocating drum "18" could not be rotated with relation to the reciprocating rod "8" or its relation with the cylinder "24." The first movement of the operating handle brought the wires, or the free ends of the wires into engagement with the upper surface of the flanged portion of the cylinder "24," and the Nu-coil scratcher rested in that position until the upper stop collar "21" engaged the upper edge of the cylindrical body of the scratcher. The wires of the scratcher resisted entry into the bore of the cylinder, and that force was overcome by actuating the operating handle "12." The initial movement of the wires as entered the bore of the cylinder "24" took a sidewise motion, as is most clearly—as can be most clearly observed in Petitioner's Exhibit EEE-2. Would you like to have me mark that, Mr. Lyon?

Q.288: Yes, you might mark that.

A. I will mark it on one of the lines in Petitioner's Exhibit EEE-2, the line made by the wire which appears almost central of the internal bore of the cylinder, and I will mark that "Start," and that sidewise [2642-95] motion of the ends of the wire was caused by crowding the wires into the bore

(Deposition of William A. Doble.)

of the cylinder. The line from the sidewise motion then traverses downwardly in a straight line until it reaches the bottom of the stroke, which I will designate "Bottom."

Q.289: Just before you go further than that, Mr. Doble, at the point that you marked on Exhibit EEE-2 the word "Start" there is also a substantially parallel line immediately to the right of that. Does that indicate the similar motion of the immediate upper wire of the Nu-coil scratcher?

A. Yes, sir; it does.

\* \* \*

The Witness: It does.

Q.290: (By Mr. Lyon): Will you mark that "Start 2" then? A. Yes, sir.

Q.291: That is, in these Exhibits EEE-1 and EEE-2 the trace lines do not come a uniform distance from the bottom of the cylinder, but some of them stop, oh, about a few inches above the others. What is the reason for that?

A. The reason for that is the spacing of the wires on the cylindrical body of the scratcher. The wire which I have marked "Start"—maybe I had better mark that "Start 1." [2642-96]

Q.292: All right.

A. That line which I have marked "Start 1" was traced by a lower wire, and the mark which was traced by the end of the wire which I have designated by the words "Start 2" is by the upper wire, which is nearly directly above the lower of

(Deposition of William A. Doble.)

the two wires, so that in each case you will get two series of lines scratched in the cylinder which are very closely spaced and are very similarly related. Continuing my former answer, I had just indicated the bottom of the line at the lower end of the down stroke of the scratcher through the cylinder, and I would like to label that "Bottom 1." That was the lowest point to which we could traverse the scratcher down through this cylinder. The operating handle "12" was then actuated to move the cylinder upward. However, the first movement of the actuating or operating handle "12" did not move the scratcher, but did move the square reciprocating rod and its fixed drum "18" until the lower stop collar "20" engaged the underside of the scratcher body. at which time considerable force was required to reverse the angle which had been placed in the wires during their initial insertion in the bore of the cylinder, and it will be observed from the point which I have marked "Bottom 1" the line traced by that particular wire swings sideways to the left in a fair radius, and [2642-97] then the wire traces a straight vertical line, which I will mark "Up-stroke." That loop showing at "Bottom 1" and the commencement of the straight line of the upstroke is the point at which the rotation of the collar with relation to the reciprocating drum "18" takes place.

Q.293: Is that the point of so-called reversal?

A. That is the point of the so-called reversal. From that point the line extends upwardly to a point which I will mark "Top of Stroke."

(Deposition of William A. Doble.)

Q.294: "Top of Stroke 1."

A. "Top of Stroke 1." It is really the top of Stroke 2, it is the first complete reciprocation, so I will mark it "Top of Stroke 2."

Q.295: Then you have got it confused with the other wire. That is why I didn't use the word "2."

A. One is "Stroke" and the other is "Start."

Q.296: All right.

A. I think it is quite clear when you observe the photograph.

Q.297: "Top of Stroke 2, Wire 1."

A. I will put "Wire 1," so that there will be no confusion. That is the highest point to which we forced the scratcher up the bore of the cylinder. At that point we reversed the rotation of the reciprocating mechanism, and the first part of the reciprocation was [2642-98] very easily obtained, because the reciprocating cylinder traveled through the scratcher which remained fixed in position within the bore of the cylinder "24" until the upper stop collar "21" engaged the upper edge of the body portion of the scratcher. Thereafter it took considerable force to cause the reversal of motion of the scratcher, and during that reversal the wires traced a further sidewise motion, as clearly seen, following the point which is marked "Top of Stroke 2, Wire 1." Thereafter, during the down stroke that particular wire inscribed on the inside of the cylinder a straight downwardly directed line until it reached the bottom, which I will mark "Bottom 2, Wire 1," and the reversal of motion again took place,

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and again the sidewise motion can be clearly observed in the photograph, and thereafter the scratcher was pushed upwardly or lifted upwardly until it left the cylinder, as can be seen. I will mark the end of the stroke, the end of the wire, let's see now, I will mark that "Wire 1 leaving cylinder."

Q.298: "Wire 1 Out" would be easier.

A. "Wire 1 Out" would be better, "Wire 1 Out." Each of the other wires of the scratcher scribed a similar line in the cylinder. Some have slight deviations, some the reversal is traced by sharp sidewise offsets, such as clearly observed in Petitioner's Exhibit EEE-1, [2642-99] especially in the lower end of the scribed line appearing in that particular photograph. Each wire is individual in itself, and scribes its own characteristic line during the reciprocation of the scratcher in the cylinder.

Q.299: What accounts for the difference in the path scribed by the different wires, Mr. Doble?

A. It depends upon the spring mounting, the particular angle from which they leave the scratcher, and I am not too sure what else causes it. It is just their particular characteristic of operation. They are all slightly different and no two are exactly identical. However, many do scribe very similar paths during the two reciprocations of the scratcher through the cylinder. In making the two reciprocations I observed the rotation of the collar of the scratcher body with relation to the reference mark at each time a reversal of direction was made. It was clearly visible that the collar of the scratcher ro-



(Deposition of William A. Doble.)

tated, that is, the collar of the scratcher or its body portion rotated with relation to the reciprocating drum "18."

Q.300: Mr. Doble, in Exhibits EEE-1 and EEE-2 in what direction do the vertical lines extend?

A. They extend parallel to the reciprocating axis of the square rod "8." [2642-100]

Q.301: Now, I hand you two additional photographs marked "W," and I will ask you if you can identify these?

A. Yes, sir. I can identify the two photographs which you have handed me.

Q.302: What are they?

A. They are photographs of the same cylinder which I have testified to with relation to Petitioner's Exhibits EEE-1 and EEE-2 after a further test had been run on these particular cylinders.

Q.303: On each cylinder is marked the letter "W." What does that mean?

A. That indicates it is a Weatherford type of scratcher or Weatherford scratcher was used in scribing the lines of the two photographs with the letter "W" in the upper right-hand corner.

Q.304: What size was this?

A. This was the same cylinder, the same size, and was the same cylinder as shown in Petitioner's Exhibits EEE-1 and EEE-2.

Q.305: What size scratcher?

A. It is a three and a half-inch scratcher.

Q.306: A three and a half-inch Weatherford scratcher?

A. Yes, sir.



(Deposition of William A. Doble.)

Q.307: For three and a half-inch casing, you mean? [2642-101]      A. That is right.

Q.308: Is there any illustration of that scratcher here?      A. I don't think so.

Mr. Lyon: We had better mark the two "W's" as Petitioner's Exhibits FFF-1 and FFF-2. This will be FFF-1.

The Witness: That is with the line above the "W."

Mr. Lyon: And the other one will be FFF-2.

(Photographs referred to were marked by the Notary Public as Petitioner's Exhibits FFF-1 and FFF-2, respectively, for identification, and made a part of this deposition.)

Q.309: (By Mr. Lyon): I have handed you another photograph, Mr. Doble, which I will ask be marked GGG, and ask you if you can identify the photograph which is marked GGG?

A. Yes, sir; I can.

(Photograph referred to was marked by the Notary Public as Petitioner's Exhibit GGG, and made a part of this deposition.)

Q.310: (By Mr. Lyon): What is shown in this photograph?

A. It is a photograph of the 3½-inch Weatherford scratcher which we used in the test. [2642-102]

Q.311: In which test?

A. In the test which produced the scribed cylinder, Petitioner's Exhibits FFF-1 and FFF-2.

(Deposition of William A. Doble.)

Q.312: Was precisely the same test procedure followed with the scratcher of Exhibit GGG in producing the cylinder traced lines of Exhibits FFF-1 and FFF-2 as was followed in the test producing the described lines?

A. Yes, sir. I might add, too, also the tests of the Jones type. In each of those four tests exactly the same procedure was followed, the same cylinder was used. Each time a test was made the cylinder was ground out, repainted and remounted in the test structure for use in making the scribed lines in the cylinders relating to those respective tests.

Mr. Lyon: I offer in evidence at this time Petitioner's Exhibits GG, EEE-1 and EEE-2 and FFF-1 and FFF-2.

\* \* \*

Q.213: (By Mr. Lyon): I hand you a scratcher, Mr. Doble, and ask you if you can identify this?

A. Yes. You have handed me a Weatherford scratcher, and it is one which we used in making the test which produced the scribed lines on cylinder "24" and each half of which is shown in Petitioner's Exhibits [2642-103] FFF-1 and FFF-2. Each of those cylinders in the upper right-hand portion bears the letter "W."

Q.314: Is that the scratcher shown in Exhibit GGG? A. It is.

Mr. Lyon: I will offer the scratcher just identified in evidence as Petitioner's Exhibit HHH.

(The scratcher referred to was marked by the

Deposition of William A. Doble.)

Notary Public as Petitioner's Exhibit HHH and made a part of this deposition.) [2642-104]

\* \* \*

Q.315: Mr. Doble, before you is a piece of apparatus. Can you identify it?

A. Yes; the piece of apparatus that stands before me is the test stand which I have testified to heretofore, and is shown in a number of the exhibits, photographic exhibits, and the exhibit numbers which I do not remember completely, but the stand is shown in Petitioner's Exhibits KK, LL, and MM, as well as many of the other exhibits which the Petitioner has placed in the record. [2642-105]

Q.316: Is this the stand on which these tests or race line determinations were made?

A. Yes.

Q.317: In this stand that is before you there is a cylinder upon the outer portion of which there is a number. Can you read that number?

A. Yes, I can. The number is 3B.

Q.318: Do you recall when that number was placed on that cylinder? A. Yes.

Q.319: When?

A. The number was placed on the large cylinder September 27th, the day that the photographs were taken in the back——

Mr. Scofield: What year was that; 1952?

The Witness: 1952, the day the photographs of the test machine were taken in the back yard at Mr. Wright's home in Los Angeles.

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Q.320: (By Mr. Lyon): And this is the same cylinder that was used in those first determinations or tests made in Mr. Wright's back yard on September 27, 1952; is that correct?

A. It is correct, excepting that it is one of the cylinders. The cylinder is  $9\frac{7}{8}$ -inch inside diameter. We also had another cylinder, a smaller [2642-106] cylinder, which was 6 and, I beleive,  $\frac{7}{8}$  inches in diameter, internal diameter, and on that smaller cylinder you placed the numeral "2," and I believe in the one photograph "2A," which clearly appears on some of the photographs showing the test machine with that particular cylinder mounted upon it.

Q.321: Has this apparatus been modified in any way since these tests were made as shown by the exhibits in evidence, Mr. Doble?

A. No; it has not been modified in any way. However, during those tests the internal bore of the cylinder was badly scratched up by the ends of the wires, and those scratch marks have been ground out of this cylinder.

Q.322: Is that the only change that has been made in this apparatus?

A. Yes, to my knowledge.

Mr. Lyon: I will ask that the apparatus be marked Petitioner's Exhibit III for identification.

(The apparatus referred to was marked by the Notary Public as Petitioner's Exhibit III for identification.)

(Deposition of William A. Doble.)

Mr. Lyon: We can go back downstairs.

Mr. Scofield: I would like to ask him one question. You see on the flat top of that cylinder a label, do you [2642-107] not?

The Witness: Yes, sir.

Mr. Scofield: That is marked "Cylinder No. 4, 95/8 i.d."

Witness: "97/8."

Mr. Schofield: "97/8 i.d.?"

The Witness: "Straight cylinder."

Mr. Scofield: What was the "No. 4"? Why was it No. 4? You indicate there were only two of these cylinders.

The Witness: There were only two of the metal cylinders that we used in the Petitioner's exhibits, photographs of which have been put in evidence. The other cylinders were not, the exhibits of which have not been put in evidence.

Mr. Scofield: What were the cylinders, the two cylinders that were put in evidence, No. 4?

The Witness: One was No. 4. I don't remember the number of the smaller cylinder.

Mr. Scofield: But there are four cylinders that go with the machine?

The Witness: No, it is either one of the two, whichever you want. There were four cylinders used in Mr. Wright's back yard, as I [2642-108] remember it.

\* \* \*

Mr. Lyon: I will offer this photostatic copy in evidence as Petitioner's Exhibit JJJ.

(Deposition of William A. Doble.)

(The document referred to was marked by the Notary Public as Petitioner's Exhibit JJJ, and made a part of this deposition.)

Q.323: (By Mr. Lyon): Mr. Doble, in this advertisement it is stated, "In running the scratchers you get a rotating, reversing action." Do you understand what that means? A. Yes, sir.

Q.324: What does the word "reversing" there mean?

A. It means at the reversal of the reciprocation a sliding rotation takes place between the body portion of the scratcher and the well casing so as to bring the ends of the bristles into a new position in the mud cake, so that on its next stroke each of the bristles or wires will traverse a fresh or a new path to remove mud cake from the well wall.

Q.325: Now, Mr. Doble, referring to Petitioner's Exhibit B, and looking at the first line, will you read what that says?

A. "B & W, Incorporated."

Q.326: I mean not the first line of the heading, I mean the first line of the printed [2642-110] matter.

A. "Upward movement of casing exceeding one foot reverses wire guides."

Q.327: What does that teach you as a mechanical engineer?

A. That teaches me an upward movement, in fact, or a downward movement of over one foot, which happens to be the spacing between the beads

(Deposition of William A. Doble.)

less the thickness of the body of the wall guide, will cause movement of the wall cleaning guide either upwardly or downwardly, and that reversal of the wires will take place at each end of the stroke, whether upward or downward.

Q.328: As a mechanical engineer, Mr. Doble, is there any difference in the teaching of the two publications, Exhibits JJJ and Exhibit B, with respect to the portions of the two ads which I have either read to you or had you read?

A. No; I would say they are the same, and as we have demonstrated here, at each reversal point, either the upward limit or the downward limit of reciprocation, each of the scratchers rotates, a small increment of rotation with relation to the casing or simulated casing upon which it was slidably and rotatably mounted.

Q.329: And it is this reversing or reversal, is it not, which causes this rotation? [2642-111]

A. Yes.

Q.330: Will you place before you the advertisement of July 7, 1941, Petitioner's Exhibit Z?

A. I have before me Petitioner's Exhibit Z.

Q.331: Now, Mr. Doble, as shown in this advertisement do you find a well casing disclosed or referred to?

A. Yes. I find a casing referred to in the written specification of the advertisement. It does not appear in the reproduction appearing on the upper right-hand corner of Petitioner's Exhibit Z.

Q.332: Do you find that that advertisement dis-

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closes a support which is adapted to be mounted on the exterior of that casing?

A. A "support"?

Q.333: Support or ring.

A. Yes; I find the scratcher, Acme wall cleaning scratcher, which is adapted to be mounted upon the outer circumference of a well casing.

Q.334: In fact, the table under the word "cost" defines the different sizes of the scratchers to be mounted on the different size casing, does it not?

A. It does.

Q.335: That scratcher as shown in that advertisement includes a support or ring, does it not?

A. Yes, we might call it a body [2642-112] portion.

Q.336: Will you mark on Exhibit Z the support or ring?

A. Yes, sir. I will mark that "S," with the letter "S." Why don't I write "Support"?

Q.337: All right.

A. I have written the word "Support" on Petitioner's Exhibit Z, and have extended a lead line to that portion of the scratcher which I have identified as the support.

Q.338: Now, state whether or not there are stiff wire whiskers, each flexibly attached at one end to the support?

A. Yes, there are, and I will draw a line from several of the wires and I will place the word "wires" at the end of the lead line which I have drawn to three of the wires which are flexibly



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mounted on the support and extend from the periphery thereof, extend outwardly from the periphery thereof.

Q.339: In what direction do those wires extend on the support with respect to the radius of the supports drawn to the projection point of a particular whisker?

A. They extend in an angular relation.

Q.340: Is that an angular inclination?

A. Yes, it is.

Q.341: State whether or not all of the scratchers [2642-113] extend in substantially the same angular relation?

A. You mean all of the wires?

Q.342: All of the wires.

A. Yes, sir, they all do, substantially so. There may be a slight variance, but it is unimportant.

Q.343: Now, Mr. Doble, I place before you also Petitioner's Exhibit I, that is Figure 26 of the Jones and Berdine report, Exhibit L, and I will ask you if this Exhibit I also shows or includes a support? A. Yes, sir; it does.

Q.344: Is that support shown as rotatably mounted on the exterior of a casing?

A. It is. Shall I make a lead line?

Q.345: Just mark what is the support.

A. I will extend a lead line from the portion which comprises the support, and at the end of the lead line will place the word "support."

Q.346: You are doing this on Exhibit I?

(Deposition of William A. Doble.)

A. Yes, sir.

Q.347: Now, does Exhibit I include stiff wire whiskers? A. Yes, it does.

Q.348: Will you just mark those "stiff wire whiskers"?

A. All right, I have placed the [2642-114] notation, "stiff wire whiskers" on the right-hand side of Petitioner's Exhibit I, and shall extend a lead line to three of the stiff wire whiskers which extend outwardly from the periphery of the support.

Q.349: State whether or not those whiskers, those wire whiskers are flexibly attached at one end to the support? A. Yes, sir, they are.

Q.350: How are they flexibly attached?

A. They are flexibly attached by bending one end of the stiff wire whiskers outwardly and extending that outer end of the whiskers through an opening in the guide bars which extend across the peripheral surface of the support. I can mark on Petitioner's Exhibit I one or two of the ends of the wire as it extends through the guide bar, if you care for me to do so.

Q.351: Well, just mark that "inner wire end."

A. All right, I have placed a notation on the left-hand side of Petitioner's Exhibit I the following words, "inner wire ends," and I have extended lead lines to three of such ends. It will be understood, of course, that there is one such inner wire end for each of the stiff wire whiskers.

Mr. Scofield: Those go to the upturned ends.

(Deposition of William A. Doble.)

The Witness: Yes, Mr. Scofield, that [2642-115] is correct.

Q.352: (By Mr. Lyon): State whether or not the wire whiskers in Exhibit I extend at an angular inclination having sidewise direction with respect to the radius of the support drawn to the projection point of the particular whisker?

A. Yes, sir, they do.

Q.353: And state also whether or not all the whiskers have substantially this same angular inclination? A. Yes, sir, they do.

Q.354: Now, Mr. Doble, you have given that answer with respect to Exhibit I in the respects in which I have asked you concerning Exhibit I. Is the scratcher of Exhibit G, that is, Figure 18 of the Jones report, the same?

A. Yes, it is. The wires are bent slightly different, but they are still comparable to the wires as illustrated in Petitioner's Exhibit I.

Q.355: Do the wires in Exhibit G have an angular inclination having sidewise direction with respect to the radius of the support drawn to said projection point of the particular whisker?

A. Yes, sir; not as completely as in Petitioner's Exhibit I.

Q.356: What do you mean by "not as completely"? You mean not as great an [2642-116] angle?

A. No, not quite as extensive an angle. The displacement from the radial line, radius passing through the center of the cylinder or casing may

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correspond with a portion of the outer end or the outer portion of the whisker before the outer loop portion is reached. However, at the inner end of each of the whiskers there is a radius which extends under the guide bar, and eventually contacts the periphery of the cylindrical portion of the scratcher, and in that portion the stiff wire whisker extends angularly with relation to an extended diameter or radius from the center of the structure.

Q.357: You used the word "periphery" here with respect to Exhibit G and the scratcher shown therein. What periphery are you referring to?

A. I am referring to the periphery of the support or collar portion of the scratcher element.

Q.358: That is, the surface which is below the—— A. Guide bars.

Q.359: ——guide bars which are visible in Exhibit G?

A. Yes, that is correct. The guide bars are welded to that outer surface of the periphery of the body portion of the scratcher element.

Q.360: I have placed before you Exhibit F. I will ask you if your answer is the same with regard to [2642-117] Exhibit F as it was to Exhibits G and I, with respect to the inclusion of these elements in the scratcher therein disclosed?

A. Yes. My answer to your question is "Yes."

Q.361: That is, you say all of the elements, which I asked you about with respect to both Exhibits G and Z, are likewise disclosed in Exhibit F?

A. That is correct.

(Deposition of William A. Doble.)

Q.362: In the same relationship?

A. That is correct.

Q.363: Now, considering all of these exhibits you have before you, F, G, I and Z, I will ask you whether in each of these exhibits you find a well casing? A. Yes, sir.

Q.364: Is that well casing of a character to be reciprocable in a well bore? A. It is.

Q.365: Do you find disclosed in each of the exhibits which you have before you a support which is rotatably mounted on the exterior of the well casing? A. I do.

Q.366: Do you find before you in each of these exhibits stiff wire whiskers? A. Yes, sir.

Q.367: Do you find in each of these exhibits that [2642-118] these stiff wire whiskers are flexibly attached at one of their ends to the support?

A. Yes, sir.

Q.368: Do you find in each of these exhibits that these wires or whiskers project from a point on the periphery of the support at an angular inclination having sidewise direction with respect to the radius of the support drawn to said projection point of the particular whisker and all in substantially the same angular relation with the support?

A. Yes, sir, I do.

Q.369: Now, state whether or not in each of these exhibits you find that the free ends of the whiskers are of a length to frictionally contact the well wall and abrade its surface upon reciprocation of the casing? A. Yes, sir; that condition I find.

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Q.370: Do you find in each of these exhibits, F, G, I and Z, that the whiskers are of such character that they will be upwardly inclined on the down stroke and downwardly inclined on the up stroke of the casing? A. I do.

Q.371: Do you find in these Exhibits F, G, I and Z disclosed a whisker structure and casing support and mounting such that on direct reversal of the direction of travel of the casing that the wires are adapted to [2642-119] fulcrum at their points of contact with the well wall and substantially at their points of contact with the support whereby vertical movement of the casing on such reversal rotates the support on the casing? A. Yes, sir.

Q.372: State whether or not this reversal relieves the bending stresses imposed on the wires?

A. It does. During that reversal action it does.

Q.373: State also whether or not these scratchers and the shifting of the wire circumferentially would result in the scratcher abrading or contacting a different area of the well bore upon each reciprocation? A. That is correct.

Q.374: Is it equally true with respect to all of these exhibits? A. Yes, it is equally true.

Q.375: Now, Mr. Doble, in each of the exhibits, F, G, I and Z, do you find a well bore scratcher adapted to be rotatably mounted on a well casing?

A. Yes, sir.

Q.376: Do you find that such scratcher comprises an annular support? A. Yes, sir.

Q.377: That is the annular support which you

(Deposition of William A. Doble.)

have [2642-120] marked?      A. Yes.

Q.378: Do you find that each one of these scratchers has stiff whiskers?      A. Yes, sir.

Q.379: Do you find that these whiskers are each flexibly attached at one end to the support?

A. Yes, sir.

Q.380: Do you find that these whiskers each project from a point on the periphery of the support at an angular inclination having sidewise direction with respect to the radius drawn to said projection point of the particular whisker?

A. Yes.

Q.381: State whether or not you also find that the whiskers all project in substantially the same angular relation from the support?

A. Yes, sir, they do.

Q.382: Is this equally true with respect to all these scratchers?      A. Yes.

Q.383: Now, Mr. Doble, I place before you Exhibit 2. Are the same answers that you just gave with respect to Exhibits F, G, I and Z also equally true with respect to Applicant's [2642-121] Exhibit 2?

Mr. Scofield: That is objected to as grossly leading.

The Witness: Yes, sir.

Q.384: (By Mr. Lyon): Now, state whether or not those answers are also equally true with respect to Exhibit M?

A. Yes, they are equally true with respect to Petitioner's Exhibit M.



(Deposition of William A. Doble.)

Q.385: Are they equally true with respect to Petitioner's HHH? A. Yes.

Q.386: Mr. Doble, in the scratchers of Exhibits F, G, I and Z, and also Exhibit 2, are the wires arranged so that the upper ends of the wires may be said to pivot in the well bore by frictional contact therewith, so that upon reciprocation of the casing the abrading wires are caused to walk around the inner surface of the well bore, resulting in rotation of the scratcher sleeve upon the casing?

A. May I have that read?

(Question read by the reporter.)

The Witness: Yes, that is true at the reversal points in the reciprocation.

Q.387: State whether or not this results in each wire removing its abrading action with the well bore at a different location of the well bore?

A. Yes, that is true, and it has been clearly shown [2642-122] in the cylinders which we placed in evidence, such, for example, as Petitioner's Exhibits ZZ, EEE-1 and EEE-2, FFF-1 and FFF-2, BBB-1 and BBB-2, and AAA-1 and AAA-2.

Q.388: State whether or not there is any difference in character whatsoever between the hunting action or walking action of the wire ends in any of the exhibits which you have demonstrated or observed that have been offered in evidence in this matter?

A. No. Basically they all operate just the same. Some will progress or rotate slightly more upon



(Deposition of William A. Doble.)

reversal of the stroke than others, but they all rotate at the reversal of the reciprocation, and the difference is only a matter of degree.

Q.389: Referring to Exhibit Z, will you state whether that exhibit discloses and teaches a wall cleaning scratcher—— A. It does.

Q.390: ——comprising an anchoring sleeve adapted to be rotatably mounted on a casing or drill pipe? A. It does.

Q.391: Does Exhibit 2 also disclose and teach that the sleeve has a plurality of circumferentially located holes? A. Yes, sir.

Q.392: Will you just mark those holes in Exhibit Z [2642-123] with the word “holes”?

A. Referring to Petitioner's Exhibit Z, I have placed the word “holes” both below and above the reproduction which appears in the upper right-hand corner of the exhibit, and from those words I have drawn three lead lines from each of the words “holes” to the holes which extend through the periphery of the sleeve or body portion or support of the scratcher.

Q.393: State whether or not this Exhibit 2 also discloses and teaches wire whiskers fixedly attached at their inner ends inside the sleeve?

A. It does. There is shown in this illustration rivets projecting inwardly to the outer surface, through the inner surface of the support, about which the inner ends of the wires are fastened.

Q.394: You might mark the rivets with the word “rivets.”

(Deposition of William A. Doble.)

A. I have placed the word "rivets" above the illustration in Petitioner's Exhibit Z, and have extended from the word "rivets" three lead lines to the inner ends of the rivets which extend through the support of the body portion of the scratcher.

Q.395: Do the wire whiskers singularly extend through those holes in the sleeve?

A. Yes, sir, they do. [2642-124]

Q.396: Do those wire whiskers have coils formed in the wire whiskers?

A. Yes, and those coils are clearly shown in illustration in Petitioner's Exhibit Z.

Q.397: Will you mark the coils in Exhibit Z?

A. Above the upper right-hand corner of the illustration in Petitioner's Exhibit Z I have placed the words "spring coils" and from the words "spring coils" I have drawn three lead lines to three of the separate coils which we have referred to.

Q.398: Do those coils impart resiliency to the mounting of the wires? A. Yes, they do.

Q.399: State whether or not those coils are interposed in the wires between their fastened ends and their free ends?

A. Yes, they are, as clearly shown in illustration of Petitioner's Exhibit Z.

Q.400: State whether or not those coils are positioned substantially where the wires pass through the holes in the sleeve?

A. Yes, sir, that is correct, as clearly shown in the illustration of Petitioner's Exhibit Z.

Q.401: Now, state whether or not the whisker

(Deposition of William A. Doble.)

or wires of Exhibit Z project to an angle from the sleeve [2642-125] simulating the trajectory of bodies thrown from the sleeve were the sleeve rotated rapidly?

A. Well, they approach that relationship, for the definition which you have read would be that of a true tangent. However, from the photograph it is hard to see or determine whether the wires leaving the sleeve do so at a true tangent, but they are not very far from a tangent relationship to the body or support portion of the scratcher.

Q.402: I believe you have testified you have some scratchers made from the teachings of Exhibit Z?

A. Yes, sir.

Q.403: Will you get those scratchers? You have before you Exhibit BB for identification and Exhibit HH for identification, also you have photographs of those——

Mr. Scofield: Did he identify the scratcher as BB?

The Witness: I am sorry, Mr. Scofield.

Mr. Lyon: The gage ring is BB.

The Witness: That is right. The scratcher itself is AA for identification. That is the 5½-inch scratcher. I believe that is AA.

Q.404: And the scratcher AA as it is located in front of you is in the gage ring BB for identification? A. That is right.

Q.405: And the scratcher Exhibit HH is within its [2642-126] gage ring Exhibit II for identification, as the same are placed before you?

(Deposition of William A. Doble.)

A. That is correct.

Mr. Scofield: Doble, won't you identify the AA as the 5½-inch scratcher?

The Witness: Yes.

Mr. Scofield: And the HH is the 3½?

The Witness: The 3½, that is correct.

Q.406: (By Mr. Lyon): Now, you also have before you photographs, Exhibits FF, GG, CC, and DD of the smaller type scratcher?

A. Of the 3½-inch scratcher, yes, sir.

Q.407: And also of the 5½-inch scratcher you have Exhibits V, W, X and JJ; is that correct?

A. Yes, that is correct.

Q.408: And this last set is of the 5½-inch scratcher? A. That is correct, Mr. Lyon.

Q.409: In each one of these exhibits now placed before you, Exhibit AA, Exhibit II, and the photographic reproductions which I have just identified state whether or not you find the whiskers projecting at an angle from the sleeve simulating the trajectory of bodies thrown from the sleeve were the sleeve rotated rapidly? [2642-127]

A. Yes, sir, that is correct.

Q.410: That is, in each one of these exhibits just identified the relationship of the wires is substantially tangential to at the periphery; is that correct? A. That is correct.

Q.411: In each one of these scratchers, Exhibit AA and HH, and the photographic representation heretofore listed, state whether or not you find that the wire whiskers projected through the holes in the anchor sleeves—— A. Yes.

(Deposition of William A. Doble.)

Q.412: —at angles substantially normal to the axis of the respective coil springs?

A. Yes, sir.

Q.413: Also state whether or not in each of these scratchers of Exhibits AA, HH, and their photographic representations you find radial studs within the sleeves which provide fastening means for the wire whiskers? A. Yes, sir, I do.

Q.414: And those radial studs are what, as you have marked on Exhibit Z? A. Rivets.

Q.415: In these exhibits before you, including Exhibits Z, AA, HH, and Exhibits CC, DD, FF, GG, and [2642-128] V, W, X, and JJ, you find that the rows of studs within the sleeve are positioned intermediate to parallel rows of holes through which the wire whiskers project to provide fastening means for the wire whiskers? A. That is correct.

Q.416: In each one of the exhibits which I enumerated in the last question do you find that each stud provides a fastening means for a pair of wire whiskers? A. Yes, that is correct.

Mr. Scofield: The Patent Office cannot help but notice the leading character of this direct examination.

Q.417: (By Mr. Lyon): Mr. Doble, in the lower of the two tests in Exhibit JJJ, that is, the advertising of September 11, 1941, is the collar or sleeve split axially? A. Yes, it is.

Q.418: Why, do you know?

A. Why, it is split axially so that it can be

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mounted upon the well casing directly without the requirement of slipping it from one end of the casing to the point at which it is to be mounted.

Q.419: In Exhibit HHH there are what appear to be hacksaw cuts in the collar. Can you ascribe a reason for those hacksaw cuts? [2642-129]

A. Yes, sir.

Q.420: What is it?

A. Those hacksaw cuts are to reduce the force that would be necessary to open the collar, that is, to open the collar or sleeve portion of the scratcher before it is welded, so that it can be mounted directly around the body portion of the well casing, and also so that it can be closed in about the casing and welded to make it an operative structure.

Q.421: How does Exhibit HHH compare with the lower cut of Exhibit JJJ? Is Exhibit HHH a split collar, axially split collar scratcher?

A. Yes, it is.

Q.422: And thereafter HHH has been welded at two points to close the ring after it——

A. Yes, to make it operative. It is not an operative structure until it has been closed and welded, and the way it now appears in Petitioner's Exhibit HHH is the way it would be normally mounted, and as it would appear after mounting upon a well casing. [2642-130]

\* \* \*

(Deposition of William A. Doble.)

Cross-Examination

By Mr. Scofield:

XQ.1: What practical experience have you had, Mr. Doble, in the conditioning of an oil well or in the cementing of an oil well?

A. I have not taken part in a conditioning or cementing of any oil well.

XQ.2: Were you present on a rig where a well was being conditioned?

A. Yes, I have been on a well rig when the well was being conditioned; that is, you mean by circulating mud, yes, sir.

XQ.3: Were they using scratchers of any sort while his mud was being circulated, do you know?

A. That I do not know.

XQ.4: Have you ever been on a well rig at the time that the well was being cemented?

A. No, sir, I have not.

XQ.5: Who led you to believe that the smooth bore cylinders which you have used in these tests simulate the bore of an oil well?

A. Well, I would answer that question this way: From a discussion of the problem with Mr. Wright and [2642-131] Mr. Barkis, and my experience in handling equipment, the main purpose was to demonstrate how the scratchers, the several different scratchers would operate where you had the condition controllable, in other words, you would have exactly the same condition for each one of the different scratchers, so that the final result of

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the operation of the different scratchers would be comparable.

XQ.6: How did you prepare yourself for the technical tests about which you have testified here, that is, did you in any way read up in the literature about oil well conditioning?

A. Yes, sir, I read extensively about the conditioning and cementing of oil wells.

XQ.7: What did you read?

A. I read the literature produced by the B & W Company. I read the Jones report. I have read the applications and file wrappers in issue here that are involved in the total discussion. I have read cementing operations, or a cementing operation appearing in one of the oil trade magazines. I believe it was written either by or for one of the Halls, and numerous other articles that I could find in the oil trade journals.

XQ.8: You did, then, prepare yourself after a fashion, and among the things that you read were the [2642-132] B & W bulletins? A. Yes, sir.

XQ.9: And the Jones report? A. Yes, sir.

XQ.10: Do you recall in that Jones report some cross-sectional views of oil wells? A. Yes, sir.

XQ.11: Do you remember in the B & W bulletins some longitudinal sections——

A. Yes, sir.

XQ.12: ——of oil wells?

A. Yes, sir; that is, you mean line drawings, because you can't take an oil well and make a cross-section of it.



(Deposition of William A. Doble.)

XQ.13: They are longitudinal sections taken through the well?

A. That is, a drawing? [2642-133]

\* \* \*

XQ.24: Now, isn't it a fact that this cylinder you used in these tests is more like a cemented cistern than it would be an oil well?

A. That is probably true. The cylinders we had were—certainly, you wouldn't find any oil well made of steel. The surface of the bore of the oil well as you drilled it in the earth would certainly not be steel such as the cylinders which were used in the tests here, but every well is different and the formation in every well is different, and to get a result which could be comparable for the different scratchers I believe it would be necessary to use a metallic surface such as we did, in order to correctly determine the operation of the various scrapers which would be comparable.

XQ.25: Don't you think that this cylinder you used in these tests would more closely simulate a cement cistern than it would an oil well, or well bore of an oil well?

A. It might or might not, it depends on what they were drilling through. They might drill through sandstone or some other formation which might give you a very smooth surface. [2642-135]

XQ.26: You evidently did not get my question. My question was: Don't you think that a cemented cistern, that is, with a cemented wall, more closely simulates the cylinder that you used here or the

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cylinders you used in your test machine than it would the well bore of an oil well?

A. I don't believe so, for the purpose that we were using it.

XQ.27: You think that the well bore of an oil well would more closely simulate this smooth surfaced cylinder than would a cemented water cistern?

A. Yes, for what purpose we were using it. I believe so.

XQ.28: Do you know whether they ever used a scratcher on the inside of a cemented cistern? To your knowledge did they ever?

A. Not to my knowledge.

XQ.29: Did it ever occur to you that the test cylinder might more closely simulate an oil well if you had a few protuberances or circumferential rings spaced within the cylinder?

A. It might, but it would not give the same characteristic of comparison between the different scratchers which we were trying to determine.

XQ.30: But you think if you had a few protuberances [2642-136] extending out into the bore or a ridge or two around it, it would more closely simulate the conditions that you have in a well bore?

A. I will say this: That a good many well bores do have protuberances or strata running into a well bore slightly, or holes in the side wall of the well bore.

XQ.31: Did you ever see one that didn't?

A. I have never seen—well, no, I haven't, excepting this: I haven't looked down an oil well bore

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and those I have looked into are always filled with mud or some other things, and I could not see down very far unless they had a casing in them, so I cannot really answer that question. [2642-137]

\* \* \*

XQ.35: Did you ever see in B and W advertising a well or a drawing of a well that did not have an uneven well bore?

A. Yes, I believe that this instruction sheet, which is—I will withdraw that. It does not show the well bore. Well, in Petitioner's Exhibit E the well bore seems to be quite smooth throughout its entire length. I don't see any particular protuberances or key-seats or anything else along the extent of the bore.

XQ.36: Now, you take a look at the B & W Bulletin 104, and see what you think of the well bores that are shown there.

A. Yes, those well bores, or at least the pictures in Applicant's Exhibit 8, does not show a well bore, but on the page opposite to it there is an illustration of a well bore which shows protuberances and depressions and differences in diameter of the bore along its length.

XQ.37: Well, would you comment upon the well bore that is shown on page 6 of this Bulletin 104?

Mr. Lyon: In what way? In what [2642-138] way?

XQ.38: (By Mr. Scofield): As to the characteristics of the well bore whether it is smooth or

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showed protuberances, rings, key-seats and other projections into the bore.

A. I do not see any key-seats, referring now to page 6, in the well bore. There is a certain amount of irregularity to the well bore, which is to a certain extent smoothed out with mud. It varies in diameter somewhat.

XQ.39: Does it have the appearance to you of the physical well bore of the test machine?

A. Generally, yes. However, I will add this: If you make the surfaces irregular you would not get the type of test which we were endeavoring to make, which would be a comparative test between the action of certain of the scratcher elements.

XQ.40: Now, look at the well bore that is shown on page 9 of Bulletin 104. Does that appear to you to have a smooth wall, like the wall of the test machine?

A. Well, it is not as smooth in some senses. It may be smoother in others because it is lined with mud. It has a bore which varies in diameter. Those differences in diameter extend over a very much greater length in actual well bores than would appear in the figure on page 9 of the illustration, because you will [2642-139] note that the lower end of the figure, that there is a statement "Horizontal scale 1 inch to the foot, vertical scale 1 inch to 40 feet," so that the irregularities are multiplied forty times.

XQ.41: Does that well bore in that cut appear to you to be or to simulate, be the same as the well bore that you have in your test machine?

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A. Yes, it would be very close to the view present in Sections A-A. It is not a metal surface, but it is a surface which is lined with mud cake.

XQ.42: Now, look at the well bore that is shown on page 12, and see whether that appears to have an irregular, roughened surface, and whether it simulates in that manner or in that characteristic the smooth well bore of your test machine.

A. In the section entitled "Oil Sands" it has a relatively smooth section; when you consider that the scale here, the vertical scale is 1 inch to 8 feet, I would say it is relatively smooth, and, of course, that is coated with a very smooth, probably uniform coating of mud.

XQ.43: And it is your belief, is it, that they select those smooth sections to put the scratchers in?

A. No, that is not my belief at all.

XQ.44: What is your belief about the [2642-140] location of the scratchers?

A. They put the scratchers where they want to scratch the walls of the well, where the oil-producing sands are, and where they want to make a bond between the surface of the well and the casing.

XQ.45: Do you know what the characteristic of the surface will be at that point, or at that location? A. Yes.

XQ.46: They do know?

A. Generally they survey it with a wall caliper, so that they have a pretty good indication of what that surface is like, and they also take wall samples.

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XQ.47: So you are familiar with the calipering of an oil well?      A. Yes.

XQ.48: Have you seen the records of these calipering operations?      A. Yes, sir.

XQ.49: Do they indicate that the oil well has a smooth bore throughout its length?

A. Substantially so. There is one thing you must remember about a calipered bore chart, is that it is greatly foreshortened in length, so that any differences would be highly magnified, so that [2642-141] there would be long sections with very little change in diameter.

XQ.50: Do you think that the calipering of a well gives you a pretty accurate idea of what the characteristics of the well bore is or not?

A. I think it gives a pretty good indication of what it is.

XQ.51: Take a look at the well bore on page 13 of this Bulletin 104, and state whether that simulates the smooth test machine cylinder?

A. Yes, I think it would, especially in the section marked "Oil sand." You must bear in mind that the vertical scale is 1 inch to 15 feet, so any irregularities as shown in this figure are extended over a long area of well hole, and they are not just as indicated in the diagram, because that is made for a particular purpose, and it would be impractical to make the illustration 15 feet long for one inch. [2642-142]

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(Deposition of William A. Doble.)

XQ.78: I was wondering whether or not you discussed this matter of the setting up of this smooth bore with an oil well surface.

A. No, I don't believe I discussed that in any way.

XQ.79: Who, if anybody, assisted you in connection with these tests that you have made, and the photographs that you have produced here of the devices that have been used in your test machine?

A. Mr. Solum, Jim Solum of the B & W Company.

XQ.80: Solomon? A. S-o-l-u-m.

XQ.81: Anybody else? A. No.

XQ.82: Who laid out the procedure [2642-147] that you followed here? A. I did.

XQ.83: You formulated the procedure and the tests as they were made?

A. That is, the tests that I have presented in court, I directed the making of those tests and laid out the procedure for making those tests.

XQ.84: Now, who determined what should be tested, and I mean—do you understand what I mean?

A. No, I am not sure I know just what you do mean.

XQ.85: Who determined what scratchers would be tested?

A. I discussed that with Mr. Lewis Lyon, and I generally determined which should be tested from the reading of the material in the controversy between B & W and Mr. Hall in the various suits,

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and what have you. The thing I was very interested in determining was that we could have an accurate basis for comparison between the several scratchers which we have produced, that is, the Jones type, the Weatherford, the Nu-Coil, and scratchers such as Applicant's Exhibit 2.

XQ.86: And you discussed that with Mr. Solum?

A. Yes, I told him what I wanted, and he obtained the scratchers for me except those that—the [2642-148] Acme, which we had made.

XQ.87: Did Mr. Solum have any part at all in formulating the procedures that you used herein?

A. I don't know what you mean by "procedure."

XQ.88: Well, you have set up a test machine with a cylinder, and then you have put in that test machine the cylindrical sleeve upon which you mounted the scratchers, and you have reciprocated the sleeve with the scratchers mounted on the sleeve within the interior of this cylinder, and you have selected certain types of scratchers and evidently run them in this test machine, and you have obtained tracings of the patterns on the interior of these cylinders. Now, all of that sequence of operations I am going to consider as a procedure, or a formulated procedure which somebody set up, and what I want to know is whether you are responsible for this thing, whether Mr. Solum is responsible, whether you are jointly responsible, or whether Mr. Lewis Lyon set this up, formulated it



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for you, or whether the three of you got together and decided what to do, or whether Mr. Barkis and Wright took part in this whole business. What I want to do is pin this on somebody, if we can. Now, I don't mean by "pinning it" in any criticism as to what you have done, but just so that we will know who is actually responsible for this whole business that we [2642-149] have so many very beautiful photographs of?

A. You can pin it right on me.

XQ.89: That is, you are the boy that is responsible for the procedure that was adopted?

A. Of the tests which we have presented here during this deposition. I did not design the machine, I didn't build it, but I directed Mr. Solum to carry out the tests. I was there all the time, and I directed him step by step just what I wanted done. I was entirely responsible for it.

XQ.90: And you also are the person who is responsible for selecting the different types of scratchers that were run in the machine?

A. Not entirely so. I conferred with Mr. Lewis Lyon.

XQ.91: On that?           A. On that point.

XQ.92: And I believe you indicated in your prior testimony on cross-examination that you had read over the Patent Office proceedings and the applications, so that you had a general knowledge of this situation, is that right, what you intended to prove, and you were then given the job of formulating the procedure?           A. That is correct.

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XQ.93: And where you had any doubt you went to [2642-150] Mr. Lewis Lyon?

A. That is correct. I conferred with Mr. Lewis Lyon in that case.

XQ.94: So that if there is any error here, in any of this work that you have done on testing that is, we can look to you and to Mr. Lewis Lyon?

A. You had better look to me principally. I am the operator that carried out the job.

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XQ.96: (By Mr. Scofield): When we adjourned this noon I believe you were being examined about responsibility of the tests on the test apparatus, and you indicated, as I recall your testimony, that the procedure that was explained in your direct examination was formulated by yourself, with some help from Mr. Lyon; is that correct?

A. Generally that is correct. I conferred with Mr. Lyon, and he told me generally what he wanted, [2642-151] and then I carried out the program, laid it out and carried it out.

XQ.97: Did you, yourself, establish the procedure—— A. Yes, sir.

XQ.98: ——of these tests, and then conferred with Mr. Lyon, or did Mr. Lyon establish the procedure and then confer with you with regard to it? Which was it?

A. Mr. Lyon told me that he wanted certain of these scratchers tested, and I tested them.

XQ.99: Did you design the test machine which has been marked as physical Exhibit III?

(Deposition of William A. Doble.)

A. No, I did not.

XQ.100: Who designed that?

A. I don't know.

XQ.101: Did Solum design it, do you know?

A. I said I did not know.

XQ.102: You don't know? A. No.

XQ.103: You have also indicated in your direct examination that some of these scratchers that were tested were made by Adams-Campbell, as I recall it?

A. I testified that Adams-Campbell made the two scratchers which corresponded to Petitioner's Exhibit [2642-152] Z, that is, one for 3½-inch and one for 5½-inch.

XQ.104: You have those on the table before you? A. Yes, sir, that is correct.

XQ.105: Would you just identify them for the record?

A. The 3½-inch Acme type of scratcher bears Petitioner's Exhibit HH, and the 5½-inch Acme type scratcher is designated by Petitioner's Exhibit AA.

Mr. Lyon: Both for identification.

XQ.106: (By Mr. Scofield): As I recall your testimony, you said that you had spent some time at the Adams-Campbell shop during the time that these were made? A. That is correct.

XQ.107: Who made those at the Adams-Campbell shop?

A. I don't know the name of the mechanic.

XQ.108: He was one of the employees?

A. That is right.

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XQ.109: How did you go about, if you did, instructing him in the manufacture of those two devices which you identified?

A. I went down to the Adams-Campbell Company and conferred with Mr. Kipper, is that his name?

XQ.110: The fellow that was here yesterday?

A. No, his son, I think it is Stewart Kipper; is it not, and I produced copies of Petitioner's Exhibit Z [2642-153] and Z-1, and told him that I wanted two scratchers made as closely to the illustration in the upper right-hand corner of Petitioner's Exhibit Z, of which Petitioner's Exhibit Z-1 is an enlargement.

XQ.111: And that enlargement you have in your hand?

A. That enlargement I have in my hand, and the enlargement was photographed as near as possible to the size of the 5½-inch scratcher, Acme-type scratcher, so that we would have as near as possible a comparable size of illustration to follow. Then I read to Mr. Kipper several portions of the printed matter in Petitioner's Exhibit Z.

XQ.112: Is that Z or Z-1?

A. Z, the enlargement is Z-1. I told him that I wanted the Acme scratcher to consist of a 14-gage steel band 2½ inches wide, the edges of which were to be turned inward; that the bristles were to be spaced as close as he could to ⅜th of an inch apart; that the bristles were to be made of 15-gage spring

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steel wire four inches in length, that is, four inches from the point where they project outwardly from the adjacent end of the spring to which they attached, and I wanted the wires to be—that is, the scratcher wires to be as closely related as could be with relation to the wires as they are shown in the enlargement, Petitioner's [2642-154] Exhibit Z-1 and illustration Petitioner's Exhibit Z; that they had to be crossed in the same manner; that the springs, coil springs, should have the same number of coils, which was rather difficult for us to determine. After considerable working on the two exhibits, Petitioner's Exhibits Z and Z-1 they came to the conclusion that each of the coils would have four complete loops; and that if he had any questions whatsoever during the manufacture or production of the two models he was to call me by telephone.

XQ.113: At this first meeting that you had with Mr. Kipper, Jr., was there anybody there present besides yourself?

A. Yes, Mr. Solum was present.

XQ.114: Mr. Solum? A. Yes, sir.

XQ.115: At the time of that meeting did you have this blown-up view, the Exhibit Z-1?

A. Yes, sir.

XQ. 116: You had that? A. Yes, sir.

XQ.117: You left it with him?

A. I left it with him.

XQ.118: You left him also the Z?

A. Yes. [2642-155]

(Deposition of William A. Doble.)

XQ.119: Did you supply him any drawings besides these?

A. No, I did not feel any were necessary. We did project or, at least I had Mr. Solum project the wires as shown in Petitioner's Exhibit Z-1, in order to determine as close as could be determined the relationship of the end of the wire, of each wire to the upper flange surface at the end of the body portion of the scratcher.

XQ.120: You followed up his work from time to time, I assume?

A. Yes, sir. I called, some days twice, and other days once, depending upon how far they were along, to pick up any questions he might have.

XQ.121: Over what period of time did the manufacture of these two devices cover?

A. As closely as I can remember now, it was about a week, a little bit less than a week, I might say.

XQ.122: During that period on how many occasions did you go down to check on his work?

A. Three or four times, as I remember.

XQ.123: Did Solum go with you?

A. Yes.

XQ.124: On each occasion?

A. Yes, sir. [2642-156]

XQ.125: That is, you were working on this as a team, you and Solum?

A. No, he was assisting me. I had no automobile at that time to get around, and he was conveying me around, and I didn't know where Adams-

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Campbell were located and he took me down there and introduced me to Mr. Kipper, Stewart Kipper. I will say this: that Mr. Solum carried out any directions I gave him very effectively, and was very helpful to me.

XQ.126: After these devices were made then the photographs were taken?

A. Yes, sometime after they were made.

XQ.127: Were the gage rings or sizing rings made at the same time?

A. Yes, they were. They were made at the same time, in order that we could as early as possible obtain the correct outside diameter of the wires, in other words, the rings acting as a gage to gage the wires.

XQ.128: Do you know the standard sizes of scratchers that are used on casing?

Mr. Lyon: That is objected to as assuming that there is such a thing.

The Witness: You mean for each size of casing?

XQ.129: (By Mr. Scofield): Yes. [2642-157]

A. I know that scratchers, say a 3½-inch scratcher, is made with various lengths of wire. In fact, when Petitioner's Exhibit HHH was received the wires were 5 inches long, and in order that we could operate Petitioner's Exhibit HHH in the same cylinder that the other 3½-inch size scratchers had been operated, it was necessary to cut the ends to obtain the proper over-all diameter, which I understand is common practice in the field.

XQ.128: And this 3½-inch scratcher which you



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have testified about would be used on 3½-inch casing; is that correct?      A. It is correct.

XQ.129: What size hole would a 3½-inch scratcher normally be used in?

A. Well, I can't answer that, because it might be used in various sizes of holes, and the wire would be cut to the proper length for that particular size of hole.

XQ.130: So, so far as you know, they cut the wires or have the wire lengths according to the size hole?      A. That is correct.

XQ.131: What would be the outside diameter of a 3½-inch scratcher if the wires were 3 inches long?

Mr. Lyon: What scratcher? [2642-158]

The Witness: What scratcher?

XQ.132: (By Mr. Scofield): 3½-inch.

Mr. Lyon: That is objected to as being indefinite as to what scratcher you are talking about.

XQ.133: (By Mr. Scofield): Do you understand the question?

Mr. Lyon: There are a whole flock of scratchers on the desk.

Mr. Scofield: I asked him about 3½-inch.

The Witness: I understand your question, but I cannot answer unless you identify a particular scratcher, because in some the wires are more tangent than in others, and that would control, the angle from which the wires leave the body would control, to a certain extent, the size, over-all diameter for a scratcher for a 3-inch length of wire.



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XQ.134: (By Mr. Scofield): What would be the outside diameter? A. Of what?

XQ.135: Of a 3½-inch scratcher with 3-inch wires.

Mr. Lyon: What scratcher, whose scratcher?

A. I don't know what scratcher you are talking about.

XQ.136: (By Mr. Scofield): Take the scratcher you were [2642-159] just testifying about, the Hall scratcher. You had it in your hand, didn't you?

A. Yes, I had the Hall scratcher, Petitioner's Exhibit HHH.

XQ.137: Yes, that is the one. What was the outside diameter of that with a 3-inch wire?

A. It would be slightly larger, I believe. May I have that measure? The length of the wire of Petitioner's Exhibit HHH—

XQ.138: I am not asking you that.

A. Wait a minute, I am answering your question—is 2½ inches long so that if we increased the length of each wire to 3 inches along the outside diameter would be correspondingly larger, just how much I couldn't tell you unless I laid it out and measured it, increase the diameter to the increase in length of the wires.

XQ.139: Would that diameter appear on any of Hall's advertising that is in evidence here?

A. For the type of scratcher as shown in Petitioner's Exhibit HHH?

XQ.140: Yes, the 3½-inch.

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A. I don't remember. I would have to look through to be sure.

XQ.141: Now, answer the same question, that is, [2642-160] the outside diameter of a 3½-inch scratcher with 3-inch wires of a wall cleaning guide.

A. By "a wall cleaning guide" which do you refer to particularly?

XQ.142: Which are the wall cleaning guides?

A. Well, we have Petitioner's Exhibit A, Applicant's Exhibit 2.

XQ.143: You don't think——

A. Aren't they all wall cleaning guides, after all is said and done?

XQ.144: Are they?

A. Yes, I think broadly they are all wall cleaning guides.

XQ.145: I didn't know it, but the only one I know as a wall cleaning guide is Exhibit 2.

A. That is a form that can be referred to as a wall cleaning guide, and referring to Applicant's Exhibit 2, the wires project outwardly from the periphery of the body portion of the scratcher 2½ inches, and if we increased the length of the wire to 3 inches that would increase the diameter of the outside of the scratcher to approximately 11½ inches.

XQ.146: My question was as to a 3½-inch wall cleaning guide with 3-inch wires. What would be the outside diameter? [2642-161]

A. Now, that is indefinite again, because it de

(Deposition of William A. Doble.)

pend upon the direction from which the wires leave the body portion of the scratcher.

XQ.147: Are you familiar with the advertising of B & W? A. Yes, generally.

XQ.148: Do you know of any advertising whatsoever where the wires extend anything but radially in a wall cleaning guide? A. Yes.

XQ.149: Will you show me the advertising?

A. Oh, advertising? I would have to look through the advertising. I don't remember.

XQ.150: You don't remember that?

A. In detail, no. I didn't memorize the advertising, but I have seen scratchers, very small scratchers, I imagine they were  $3\frac{1}{2}$ , where the wires projected out about a foot on each side. It looked like a spider.

XQ.151: Do you know of a size scratcher, whether it be B & W or Hall, that is  $4\frac{1}{2}$  inches?

A. That is what?

XQ.152: In size a  $4\frac{1}{2}$ -inch scratcher?

A. Known as  $4\frac{1}{2}$ ?

XQ.153: Yes, did you ever hear of that size in [2642-162] scratchers?

A. I don't know that I have. It is  $4\frac{3}{4}$ . I don't know what  $4\frac{1}{2}$  would be, a standard size or not. There is  $4\frac{3}{4}$ .

XQ.154: Did you ever hear of a  $4\frac{1}{2}$ -inch casing?

A. Not in connection with oil wells. They may have, that does not mean they don't have it.

XQ.155: You have heard of a  $4\frac{3}{4}$ -inch casing?

A. Yes.

(Deposition of William A. Doble.)

XQ.156: What size scratcher would they use on a  $4\frac{3}{4}$ -inch casing?

A. That would depend on the size of the well bore. The wires come in long sizes, and they cut them off, depending upon the diameter of the well bore.

XQ.157: I don't believe you understood my question. I asked you first if you knew of the  $4\frac{3}{4}$ -inch casing, and you said you did. A. Yes.

XQ.158: And then I asked you what size scratcher they would use on a  $4\frac{3}{4}$ -inch casing.

A. Oh, a  $4\frac{3}{4}$ -inch scratcher.

XQ.159: That is right. In what size well hole would they use a  $4\frac{3}{4}$ -inch casing? What size do they use in the industry, in other words?

A. Pardon me, may I have that question read? [2642-163]

(Question read by the reporter)

The Witness: Well, it all depends upon the well, some wells are drilled larger and some are smaller, so that it would depend on the size of the well bore, so you could use a  $4\frac{3}{4}$  on many different sizes of well bores.

XQ.160: (By Mr. Scofield): From what range?

A. That I am not familiar enough to tell you.

XQ.161: You don't know?

A. No. [2642-164]

\* \* \*

XQ.198: In connection with this educational work that you did, that is, to educate yourself or

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this technique or this practice prior to the time that you made these tests, did anyone advise you of the width of the annular space between the casing and the well bore normally in an oil well when scratchers are run?       A. No.

XQ.199: They did not do that?       A. No.

XQ.200: Did you ask anybody?

A. No, I don't remember asking anyone.

XQ.201: Do you know whether or not the people responsible for running these scratchers, that is, the men on the rig or the superintendents, take into consideration that annular space when they order the scratchers? [2642-170]

A. I believe that they take that space into consideration in ordering the scratchers, yes.

XQ.202: That is——

A. That is why sometimes they call for wires of longer length than are listed in the standard table of sizes.

XQ.203: Now, why would they want wires of longer length under certain conditions?

A. So that they can cut the wires off, to suit the diameter of the well bore.

XQ.204: Is it your belief that they order wires long, and cut them off?

A. In some instances, yes.

XQ.205: Suppose that the annular space is very narrow, do you know whether they ever order a bigger type of scratcher for a hole of that character?

A. I wouldn't know. I don't know what they do

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order. I have never seen any orders from any of the operators in the field.

XQ.206: When you were giving your testimony on direct, did you realize that your testimony was conspicuously lacking with respect to dimensions?

A. In what respect?

XQ.207: Well, dimensions of the cylinder that you were running the tests in, and the size of the scratchers, [2642-171] that is, the outside diameter of the scratchers that were run in these cylinders?

A. I don't believe so. I pointed out upstairs when we were viewing the test machine, that the cylinder located in that machine was  $9\frac{7}{8}$  inches in diameter.

XQ.208: Was that the only mention you made in all your testimony of the diameter of one of those cylinders? A. It might have been.

XQ.209: Now, let's find out what all these diameters and size scratchers were, and let us first take the scratcher that you ran, I think it was the  $3\frac{1}{2}$ -inch scratcher, that corresponded to Exhibit M?

A. Yes.

XQ.210: Do you have that scratcher?

A. I think we do.

XQ.211: That was not offered, was it?

A. No, I don't remember it being offered.

XQ.212: Do you know why it was not offered?

A. No, I haven't the least idea why.

Mr. Lyon: I can tell you, if you want to know, so that you won't draw any unwarranted inference

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There is no use duplicating the record with the same thing. If you want it, he has it in his hand.

Mr. Scofield: I think it had better go in, and if you want to mark it as one of your exhibits, why, do so, [2642-172] or I will mark it as one of mine.

Mr. Lyon: I will offer in evidence this scratcher as Petitioner's Exhibit KKK, the one that the witness has just produced.

(Scratcher referred to was marked by the Notary Public as Petitioner's Exhibit KKK, and made a part of this deposition.)

The Witness: Is there a question, Mr. Scofield?

Mr. Scofield: I don't know whether there is or not.

Mr. Lyon: Before you make your measurement, can you make an accurate determination, the way you are, within a quarter of an inch?

The Witness: I think I can come closer than a quarter of an inch on it, certainly.

Mr. Lyon: You did not on Exhibit 2.

The Witness: Didn't I? Maybe I had better measure Exhibit 2 again.

XQ.213: (By Mr. Scofield): I suggest you reverse that to have the scratcher up close to your ruler.

A. Remeasuring Applicant's Exhibit 2, I now find, by placing the scratcher on the ruler and lining the wires up, that the over-all diameter of the scratcher is approximately 10 $\frac{1}{4}$  inches.

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XQ.214: And you want to change your testimony to that effect? [2642-173]

A. Yes, I would like to, please, and in measuring—or did you ask me to measure it?

XQ.215: You can while you are doing that. Yes. I am going to ask you——

A. I will put the ticket on first, referring to KKK. All right. Now, I have in my hand Petitioner's Exhibit KKK.

XQ.216: And you are measuring the outside diameter?

A. And I am measuring the outside diameter over the wires, and I get substantially  $7\frac{1}{2}$  inches.

XQ.217. That particular scratcher, Exhibit KKK is shown in one of the exhibits, is it not?

A. You mean those photographs?

XQ.218: Yes. A. Yes, it is.

XQ.219: You might identify that. I believe that is shown in—— A. I think it is NN.

XQ.220: That is the scratcher itself?

A. Oh, I see. You wanted it on the machine?

XQ.221: Yes. I think it is shown on the machine in one of the exhibits, I believe it is OO, is it not?

Mr. Lyon: No.

The Witness: I don't have it noted in my list.

Mr. Lyon: No. [2642-174]

The Witness: It is hard to tell in photographs the diameter of the wires, but it is either Petitioner's



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Exhibit KKK or Petitioner's Exhibit M, I cannot say which.

XQ.222: (By Mr. Scofield): Did you test both of these in the machine? A. Yes.

XQ.223: Did you testify with respect to both of those tests on the light gage wire and the heavy gage wire?

A. I don't believe I did, but I think in my direct testimony I stated that I had run the heavy gage wire, and at that time we were worried whether the light gage wire, the spring wires, would have sufficient strength to scratch the blackened portion of the cylinder,

XQ.224: It was my recollection you testified with regard to running the light gage wire.

A. That is correct.

Mr. Lyon: You testified, didn't you, with respect to the operations in Mr. Wright's back yard with reference to the heavy gage wire, too?

The Witness: That is correct, and I have run the heavy gage wire many times, I won't say "many times," but several times, and as far as I could tell they both worked substantially the same. [2642-175]

XQ.225: (By Mr. Scofield): You did testify that these were run in Mr. Wright's back yard?

A. That is correct.

XQ.226: Was he present during——

A. Yes, sir, he was present.

XQ.227: ——all the runs?

A. Yes, sir, at all the runs.

Mr. Lyon: So that there will be no misunder-

(Deposition of William A. Doble.)

standing, he was present at all the runs run in his back yard?

The Witness: That is correct.

Mr. Lyon: But he was not present when any of these tracing cylinders were made?

The Witness: No, I don't remember seeing Mr. Wright present during the running of any of the scratchers which scratched the black portion of the cylinders, which we have referred to and have the photographs of.

XQ.228: (By Mr. Scofield): Let us get back to the running of this Exhibit KKK in your test apparatus. Is there in evidence here as a physical exhibit the cylinder that you used on the test machine when that scratcher was run?

A. No, I don't have it present.

XQ.229: Do you have that cylinder here in the building? A. Yes, sir. [2642-176]

XQ.230: Did you testify or didn't you what the diameter, inside diameter of that cylinder was?

A. I don't remember if I did, but it is  $6\frac{7}{8}$  inches in diameter.

XQ.231: It is  $6\frac{7}{8}$  inches in diameter, and what was the outside diameter of this scratcher Exhibit KKK? A.  $7\frac{1}{2}$  inches.

XQ.232: Just state for the record what the annular space was——

Mr. Lyon: That is a matter of mathematical determination.

XQ.233: (By Mr. Scofield): ——or if you will,

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just the difference in diameter between the cylinder and the outside diameter of the scratcher?

A. Now, just so we may have that question definite, what part of the body portion of the scratcher do you wish me to measure, the cylindrical portion, or the diameter across the guide bars that hold the wires in place?

XQ.234: I thought that in the phraseology we were using, the outside diameter of the scratcher, that we were always considering that to mean the diameter of the entire scratcher, including the wires.

A. Oh, I have measured that, and that was  $7\frac{1}{2}$  inches, I remember. [2642-177]

XQ.235: That was  $7\frac{1}{2}$  inches? A. Yes.

XQ.236: And the cylinder, you say, was  $6\frac{1}{8}$  inches? A.  $6\frac{7}{8}$ .

XQ.237: Now, just state for the record what the difference in diameter was between the outside diameter of the scratcher and the inside diameter of the cylinder?

A. Roughly a half inch difference—wait a minute.

Mr. Lyon: Why do you say that?

The Witness: About three-quarters of an inch.

XQ.238: (By Mr. Scofield): Can't you give it to me in 8ths, so that we will be exact?

A. Let's see  $7\frac{1}{2}$  and  $6\frac{7}{8}$ ,  $\frac{5}{8}$  of an inch.

XQ.239: I believe you also indicated that you ran a 3-inch wall cleaning guide?

A. 3-inch wall cleaning guide?

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XQ.240: 3½-inch wall cleaning guide in this same apparatus.

A. Out at Mr. Wright's back yard, as I remember it, we ran one, but I didn't make a cylinder of the one. The cylinder I made was of a 5½-inch wall cleaning guide type of scratcher. [2642-178]

XQ.241: I call your attention to Petitioner's Exhibit XX. Maybe I can give you this, and it will be quicker.

Mr. Lyon: Let me see what is shown to you.

The Witness: Yes, the scratcher mounted on the test stand as shown in Petitioner's Exhibit XX was run in Mr. Wright's back yard on September 27, 1952.

Mr. Lyon: Go ahead, I have it.

XQ.242: (By Mr. Scofield): Was that scratcher that is shown in Petitioner's Exhibit XX produced?

A. No.

XQ.243: Do you have it here?

A. I don't know.

XQ.244: Will you look and see if you have got it?

A. I don't think we have. I don't think we have any scratchers left here. No, we don't have it here.

XQ.245: Can you produce it?

A. I can't say whether I can or not. I do not have it, so I can't produce it.

XQ.246: Do you know where it is?

A. No, I do not.

XQ.247: Do you know the outside diameter of the——

A. No, I do not.

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XQ.248: Is this scratcher still in [2642-179] existence?

A. As far as I know it is. I didn't destroy it.

XQ.249: You can have it tomorrow morning, can't you?

A. I don't know whether I can or not.

XQ.250: Will you ask the gentlemen here if they have it, and it can be produced by tomorrow morning?

A. If I can get hold of it, no reason why it shouldn't be produced, as far as I can see.

Mr. Scofield: I will ask Mr. Lyon: Will you produce that tomorrow morning?

Mr. Lyon: Have I got it? I don't know.

The Witness: I really don't know where it is.

Mr. Lyon: If I can find it, it will be produced.

XQ.251: (By Mr. Scofield): Do you know what the outside diameter of it was?

A. No, I do not.

XQ.252: But it was run, was it not?

A. That is correct.

XQ.253: In this cylinder, which was  $6\frac{7}{8}$ -inch inside diameter?

A. I haven't testified that the cylinder——

XQ.254: You have not testified to that?

A. No. Let me finish my answer. May I have the Petitioner's exhibit? I have now before me Petitioner's Exhibit XX, and the cylinder which we have [2642-180] referred to as "24" which is mounted on that stand, and has the sort of indefinite number "2A" down near the bottom of it was an

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aluminum cylinder, and I don't remember the diameter of that. I didn't measure it at the time. I don't know what the diameter of that cylinder was.

XQ.255: Do you recall testifying——

A. This is another one of these cylinders. You remember the cylinder upstairs was marked "4," and the cylinder before us in Petitioner's Exhibit XX was one of the four. I don't remember which number it was, nor do I remember its diameter. I didn't measure it.

XQ.256: Do you remember testifying with reference to any test that was made on this particular scratcher in this cylinder? A. Yes, I do.

XQ.257: In view of that testimony it becomes doubly important that we have that scratcher and the diameter of this cylinder.

A. If we can locate the scratcher. I haven't—I don't know as I have seen it since September, and I will try to locate it, and if I do, I will certainly bring it in, and I will measure the cylinder, but tomorrow morning, I don't think I will have time to measure the cylinder by tomorrow morning. [2642-181]

XQ.258: Well, as soon as you can.

A. All right, I will be glad to.

XQ.259: We are referring you, if you will, to Petitioner's Exhibit YY. A. What is that?

XQ.260: That is the larger type.

A. Mr. Scofield, I now have Petitioner's Exhibit YY.

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XQ.261: Was that scratcher offered here?

A. I don't believe so. I don't remember seeing it here.

XQ.262: What became of that?

A. I don't know. I haven't seen it. I don't believe I have seen it since September 27th.

XQ.263: It is not that one that was in court that I brought? A. That is the one you brought.

XQ.264: That is Exhibit 2?

A. And it is similiar except that it is not the same color. It is similiar to Applicant's Exhibit 2.

XQ.265: That was not produced here?

A. No.

XQ.266: Was that——

A. As far as I know.

XQ.267: Was that cylinder produced [2642-182] here? A. Yes.

XQ.268: Do you know the outside diameter of that scratcher? A. I do not.

XQ.269: Will you produce it so that we can measure it?

A. If I can find it, I will, I will be glad to.

XQ.270: Do you have any recollection as to how much larger the outside diameter of the scratcher was with relation to the inside diameter of the cylinder?

A. I would have—I would have to guess at it.

XQ.271: Do you want to give a guess on that?

A. I would rather not. I would rather produce it and measure it.

XQ.272: Does this photograph give any indica-

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tion to you?      A. No.

XQ.273: It does not?      A. No.

XQ.274: You don't think these photographs are accurate enough for that?

A. Well, it is not a question of being accurate enough. There are many things about photographs that is not well to try to measure it. I will be glad to try and produce it, and also we know the diameter of [2642-183] the cylinder was  $9\frac{7}{8}$ , and if we know the exact measurements then we won't have to guess about it.

XQ.275: Won't you put a straight edge along this cylinder, the upright outside wall of the cylinder and see how much it misses the ends of the scratcher wires?

A. That is exactly the reason you should not try to measure a photograph, because I know the scratcher fit closely into the cylinder, and I know the outside diameter of the scratcher was larger than the internal bore of the cylinder. How much——

XQ.276: You wouldn't want to say how much larger?      A. No use guessing at it.

XQ.277: And you cannot get any idea from laying a straight edge along there?

A. I think it would only be confusing.

XQ.278: But you are going to try to find that, and bring it in so that it can be offered, and you are going to get the smaller one, if it can be found, and bring that in?



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A. We will make every effort to locate it, and if we find it, we will certainly bring it in.

XQ.279: That is all I can ask of you.

A. I may be able to do that by tomorrow morning, but we can certainly——

XQ.280: You can come back on Monday and bring it [2642-184] in?

A. It looks like I am going to have to.

XQ.281: You might have to, who knows? You do know, however, the inside diameter of the cylinder shown in Exhibit YY, don't you?

A. Yes, I gave you that this morning.

XQ.282: What was that size? A.  $9\frac{7}{8}$ .

XQ.283: That was  $9\frac{7}{8}$ ? A. Yes.

XQ.284: And there was a  $5\frac{1}{2}$ -inch scratcher run in that? A. That is correct.

XQ.285: But you don't know the outside diameter, that is, you don't know the diameter of this particular scratcher? A. That is correct.

XQ.286: Was your father an expert patent witness?

A. Yes, that is, part of his life he was. The latter part of his life he was active in quite a number of cases, and he and I were in partnership together for a number of years.

XQ.287: Did he ever caution you at all about testifying?

A. I don't know; in what regard do [2642-185] you mean?

XQ.288: I just wondered if he ever had given

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you any precautionary suggestions with reference to your testimony given in these lawsuits or not.

A. Not that I can remember. We used to talk over our various cases quite a good deal together. He would take certain cases and I would take certain other cases, and sometimes we would both be involved in the same case, and naturally we discussed them back and forth extensively.

XQ.289: Did he ever caution you with respect to proofs to establish a desired result and true factual proofs?

Mr. Lyon: I certainly object to the question on the ground that I don't know what it means.

XQ.290: (By Mr. Scofield): Did he ever caution you about that?

A. I am afraid I don't know what you are talking about.

XQ.291: You don't understand it? A. No.

XQ.292: I wonder if you won't make a diagram for me? You have offered, or there has been offered in evidence on behalf of the Petitioner here some photographs showing the top views of the scratchers that were made by Adams-Campbell to simulate the Acme [2642-186] scratcher, and I call your particular attention to Exhibit FF.

Mr. Lyon: I object to the statement as a misquotation of the record. We again caution counsel if at any time he intends to use any of his statements and imply that the witness agreed with them, that it will be necessary for him to get an agreement, a specific agreement of the witness as to his state-

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ment. His ability to misquote and to formulate words to his own liking makes this necessary.

Mr. Scofield: I am sure that the witness will be cared for by his own counsel here.

XQ.293: You have before you Petitioner's Exhibit FF? A. I do.

XQ.294: Let me give you a sheet of paper or a block of paper here. Do you have a compass with you? A. No, sir, I do not. [2642-187]

\* \* \*

XQ.299: I think it will be easier from the point end. That is your own choice, and I don't care whether the diameter is exact, just make it as close as you can. This is going to be just as good a diagram as we can make, and not perhaps as good as some expert draftsman could make it.

Mr. Lyon: Of course, it is either going to be——

XQ.300: (By Mr. Scofield): Make the print over to the right-hand side, so that we can get another circle on there, make two at the same time, side by side, and make them as dark as you can so that they will photostat. A. I have two circles.

XQ.301: Make a collar thickness for that to make it appear it has some thickness of the collar.

A. I think those are dark enough, don't you, Mr. Scofield?

XQ.302: Yes, that is all right. Now, in the left-hand, we will call those collars, in the [2642-188] left-hand collar would you draw a dotted line diametrically through the circles and make a dotted

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line, because it is of little effect—no, make it vertical. A. Through each of them?

XQ.303: Yes, I think you might just as well. Now, through the left-hand collar again indicate a a perforation so as to show where one of those coil springs comes through these, so that the coil spring would pass through the vertical line that you have. It would be the axis for the coil, that is, the vertical line would be the axis for the coil.

A. We have not shown the thickness of the wall.

XQ.304: You might just do that in that location in free-hand, if you care to.

A. It is a little heavier then.

Mr. Lyon: A lot heavier.

The Witness: A lot heavier.

XQ.305: (By Mr. Scofield): Just indicate one of the perforations at the vertical line.

A. I have done so, with the dotted lines as you suggest.

XQ.306: That is all right. You have indicated on your direct examination that there were four whorls or convolutions in each of these coil springs, and that is [2642-189] satisfactory to me, so won't you put in just four of those convolutions in the location where that perforation is through the collar?

A. I may not have those just right, but they are roughly.

XQ.307: That is doing better than I can do.

A. That is a little bit out of proportion. I hope you will appreciate that.

XQ.308: Put before you this photograph FF,

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and as I look down on that collar with one of these coils located in about that position, I find that two scratchers seem to come out of the same coil. What is that optical illusion due to?

A. One is the upper wire and the other is the lower wire. There are two wires vertically spaced.

XQ.309: That was my understanding of it, and I notice that those two wires that are vertically spaced in the manner you have explained come off of the collar at a different angle, do they not?

A. Well, I don't think they come off at a different angle.

XQ.310: They appear to from the photograph.

A. They appear to.

XQ.311: Yes, what is that due to?

A. That is due to the displacement of [2642-190] the lower holes around the periphery of the cylinder with relation to the holes of the upper holes; that is, they are in staggered relation.

XQ.312: I thought you said——

A. I can point out here an upper row of holes that are positioned around the upper edge of the periphery, and the lower row of holes are staggered with relation to the upper row of holes.

XQ.313: Does the angularity of the wires upwardly and downwardly have anything to do with that? A. Have anything to do with what?

XQ.314: To do with this illusion that you have that they are at different angles to the collar?

A. Well——

XQ.315: Do you understand what I mean?

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A. Yes, but I don't agree with you that there is any optical illusion. It appears to me you can see the upper row ones and the lower row ones from a different point on the collar, so that they are all of the same angle with relation to the collar, the upper row and the lower row.

XQ.316: It is a fact, is it not, that there appears to extend from each one of those coils two wires?

A. No, I do not think so.

XQ.317: Don't you get that effect [2642-191] from looking down at or on looking at Exhibit FF?

A. No.

Mr. Lyon: The witness has already answered the question. He said he did not.

The Witness: No, I did not. I can clearly see the upper and the lower wires are below them.

XQ.318: (By Mr. Scofield): Certainly the wires are at a different angle, are they not?

A. No, they are not at a different angle. They are the same angle with relation to their divergence from the periphery of the collar or body portion.

XQ.319: Now, won't you draw right at or through the top of this left-hand collar that you have drawn on the paper you have before you a tangential line which is at right angles to the vertical dotted line so that it intersects the top of the collar—no, a tangential line?

A. I am going to get it, if I can.

Mr. Lyon: I would like to have a definition of the word "tangential" as used by counsel. Until he does give it I am going to have to instruct the

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witness not to answer the question, because counsel has argued three different definitions for the word.

XQ.320: (By Mr. Scofield): Do you understand what a tangent to a circle is? [2642-192]

A. I know what a tangent to a circle is, but I don't know what you have defined as a tangent to a circle.

XQ.321: Can you draw a tangential line to the top of that upper circle, the outer circle, which is at right angles to the vertical line you have drawn there? A. Yes.

Mr. Lyon: The witness obviously cannot do any such thing until you define what you mean by "tangent."

XQ.322: (By Mr. Scofield): Oh, yes, the witness can. He said he could.

Mr. Lyon: You have argued three different definitions for the word already. Which one are you adopting in this question?

XQ.323: (By Mr. Scofield): I am not adopting any definition for "tangent" here. I am asking him merely to draw a certain tangent, and he says he can.

Mr. Lyon: He can draw what he understands to be a tangent.

Mr. Scofield: That is all I want him to do.

Mr. Lyon: But that is not what you will argue it is. Which definition are you using?

Mr. Scofield: I am just using the definition as it appears in the dictionary.

Mr. Lyon: That would be satisfactory [2642-193] if that is the definition you are adopting.

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Mr. Scofield: That is the definition.

The Witness: Well, I will draw the definition as applied in geometry to the word "tangent."

XQ.324: (By Mr. Scofield): You mean you will draw the tangent I have defined? A. Yes.

XQ.325: Draw it in a dotted line, please.

A. All right. That is as close as I can get to it, with the tools I have to work with.

XQ.326: I admit you are working under difficulty, but I think you are doing a good job. Now, can you draw in the wire which extends from that coil at the angle which it appears in the photograph?

Mr. Lyon: Photograph or model, Mr. Doble? I think he can get further with that than with this picture.

XQ.327: (By Mr. Scofield): Would a protractor help you at all?

A. I don't know. That is roughly as I view the wire extending from the coil spring which we had previously drawn.

XQ.328: You have drawn in the wire somewhat below the tangential line? A. That is correct.

Mr. Lyon: "Somewhat below" in [2642-194] what relation?

Mr. Scofield: It can only be below in relation to the drawing that he has made.

Mr. Lyon: The drawing has no top or bottom to it at the present time.

Mr. Scofield: I said it was below the tangential line.

XQ.329: The top is, of course, the upper part



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of the sheet, is it not?      A. Yes.

Mr. Lyon: Just draw on the sheet what you mean, "top."

The Witness: I will put "top" here and "bottom" down here, and I might state the angle which I will mark "A" is less than 90 degrees.

XQ.330: (By Mr. Scofield): And it is your belief from this photograph taken above that the wires which extend from the coils of that collar shown in Exhibit FF extend below a tangential line?

A. That is as I view it.

XQ.331: That is as you view it?      A. Yes.

XQ.332: That is shown from the photograph you were looking at, Exhibit GG?

A. For the moment I am looking at Exhibit GG.

XQ.333: Now, is that the same—— [2642-195]

A. It is the same 3½-inch Acme type scratcher, but the view is taken so as to bring the center of the camera as near as possible over one portion of the periphery of the body portion, so that you can get a little more correct viewing of the angle of the wire with relation to the——

XQ.334: How does it appear to you?

A. It appears to have even—an angle even less than the one I have shown; in other words, the angle "A" would be less than the angle "A" which I have shown on my sketch.

XQ.335: Look at the sketch itself, as Mr. Lyon has suggested and see what you think of the wire that you have drawn here, whether it is an accurate reproduction of the actual device.

(Deposition of William A. Doble.)

Mr. Lyon: The wire is presently the same, Mr. Scofield.

Mr. Scofield: Don't instruct him.

Mr. Lyon: I am not instructing him.

Mr. Scofield: Just let him answer his own question.

Mr. Lyon: I am not instructing the witness in any way.

Mr. Scofield: Don't answer for him.

Mr. Lyon: I am not answering for him.

The Witness: I would say that in most cases the [2642-196] wires on the actual model, that is, on Petitioner's Exhibit HH for identification, has an angle "A" of less than 90 degrees; in fact, it is less than that which I have depicted on the sketch which you have before you.

XQ.336: (By Mr. Scofield): Now, will you——

Mr. Lyon: In making that answer, Mr. Doble, were you judging solely by eye? A. Yes, sir.

XQ.337: (By Mr. Scofield): Will you now designate the double ring as "collar" and the four convolutions as a "coil"?

A. I will put "coil springs."

XQ.338: "Coil springs"? All right, and the wire as a "wire."

A. I have put little cross-section marks on the wire so that it can be better identified, and also labeled the wire with a lead line and an arrowhead on the end of the lead line.

XQ.339: Won't you identify also this particular drawing for the record as "Doble-Acme"?

(Deposition of William A. Doble.)

A. I had better put "3½-inch Acme," shouldn't I?

XQ.340: All right. Now, will you move over to the right-hand diagram and again designate that as "top" and "bottom," so that we won't have difficulty about that, [2642-197] and won't you put before you, I will get them for you—first, maybe it would be well for us to identify here or list at the side of the "Doble-Acme" drawing the scratchers or the exhibits that correspond to this particular drawing you have made. Maybe I can help you with that.

Mr. Lyon: I would like to know what you mean by "correspond."

XQ.341: (By Mr. Scofield): Well, you made a 3½-inch scratcher of that sort, did you not, Mr. Doble? A. Yes.

XQ.342: And that is shown in Exhibit DD?

A. You are referring to the drawing first?

XQ.343: The photographs.

A. I mean the photographs, yes.

XQ.344: That is Exhibit DD? A. Yes.

XQ.345: And the same thing would be true of Exhibit FF? A. That is true.

XQ.346: And GG? A. That is correct.

XQ.347: The same is true of JJ?

A. I don't think so.

XQ.348: We have that scratcher here, haven't we? [2642-198]

A. Yes, we have it here. It should be CC.

XQ.349: CC, 3½—

(Deposition of William A. Doble.)

A. They are all—these are all  $3\frac{1}{2}$ -inch.

XQ.350: What is this one?

A. That is the  $5\frac{1}{2}$ .

XQ.351: That is made the same as this except it is a larger diameter, is it not? A. Which?

XQ.352: This one here.

A. I didn't put that one down. I put CC down.

XQ.353: You put "CC"? A. I put "CC."

XQ.354: But I say this scratcher shown in Petitioner's JJ is the same design as that, is it not, in so far as the wires are concerned, except it is a larger size? A. Generally that is correct.

XQ.355: Then let us just number that and put the size of it—

A. Suppose I put " $3\frac{1}{2}$ " above this list?

XQ.356: Just draw a line out from the "CC" and put " $3\frac{1}{2}$ ."

A. Those are all  $3\frac{1}{2}$  I have down there so far. Suppose I put " $3\frac{1}{2}$ " in that column, and then we have JJ, which is  $5\frac{1}{2}$ . I will put that in a [2642-199] different column.

XQ.357: That is all right. That is better than what I suggested. Now, the actual scratcher, the  $3\frac{1}{2}$ -inch scratcher is here, is it not? A. Yes.

XQ.358: Just put that exhibit under the  $3\frac{1}{2}$ -inch column, and the  $5\frac{1}{2}$ -inch scratcher is here?

A. It is.

XQ.359: So let's put that down.

A. And it is AA; all right.

XQ.360: Now, put before you, if you will, the advertising. I think maybe the blown-up exhibit

(Deposition of William A. Doble.)

would probably be more illuminating, be more easily seen.

A. Pardon me just a minute. All right.

XQ.361: You have before you this blown-up advertising sheet which has been offered as Exhibit Z-1, have you not?      A. Yes, sir.

XQ.362: The coil springs shown in that particular exhibit, are they arranged in the same fashion as shown in the "Doble-Acme" exhibit?

A. Yes, they are.

XQ.363: Is it your belief that the coil springs in Exhibit Z-1 are radial, the axis of those coil springs extend or coincide with the radius of that collar? [2642-200]

A. No, all of them do not appear to be.

XQ.364: About how much—

A. Some of them look like they might be, but, as I say, it is difficult to tell from a photograph of this nature.

XQ.365: How much do you think they are canted?      A. I wouldn't want to hazard a guess.

XQ.366: You put a straight edge on there and do the best you can, because you made these, of course, from this.

A. Partially from that and partially from the description.

XQ.367: Did it say anything in the description about a canting of those coil springs from the radial line?      A. No, it did not.

XQ.368: It did not?      A. No.

(Deposition of William A. Doble.)

XQ.369: You understand you are now putting yourself in the position when you were instructing this Adams-Campbell man, and I want you to give your best guess as to how much those coil springs are canted from a radial line.

A. I just can't tell you how much they are canted. [2642-201]

XQ.370: We have got to work it out between us.

A. O.K., I don't know that all of them are. For example, the one I am now pointing to, which is down in the lower, I will say right of center, looks like it is directly projecting through the hole.

Mr. Lyon: So that there will be no question about it, just mark that on the Exhibit Z-1.

The Witness: I will mark it——

XQ.371: (By Mr. Scofield): With the letter "X."

A. ——with the letter "X." That will be good.

XQ.372: Look at the one directly above that in the upper row that looks like it is canted at about 90-degree angle.

A. I would say a 90-degree. It is certainly canted, that is, as far as——

XQ.373: Doesn't it look like it is about a 90-degree angle from the line?

A. No, I don't think so.

XQ.374: You don't think it is?

A. No, you can't see enough of the spring really to tell. It didn't all come out in the photograph. I could not tell. That would not be 90 degrees, I know, and you take the springs up in the upper part

(Deposition of William A. Doble.)

of the illustration, and they are certainly not 90 degrees to the axis through the scratcher, scratcher body. [2642-202]

XQ.375: Are they a 30-degree angle?

A. They are—they appear to be all different angles, and some of them appear to be almost straight.

XQ.376: You know they are at an angle, don't you?

A. I would say the majority of them are at an angle.

XQ.377: You did not take that into consideration at all when you made these exhibits, did you?

A. I didn't express it just that way, but you will observe a number of these have a slight cant or angle, or whatever you call it, that is, referring to Petitioner's Exhibit for identification HH.

XQ.378: Won't you just make an opening in the upper part of the second collar and put in a coil spring there at an angle, the best guess that you can make from that description, 30 degrees, 60 degrees, 90 degrees, or whatever you will?

Mr. Lyon: That isn't possible to do, because the witness has pointed out they vary from zero maybe on up.

Mr. Scofield: That is all right. He made these scratchers from that advertising sheet, and I want him now to put in the coil spring as it appears to him from this advertising sheet.

The Witness: Well, I would suggest that we

(Deposition of William A. Doble.)

put in [2642-203] two springs to cover the range, you might say.

XQ.379: (By Mr. Scofield): That is all right. Put in two springs.

A. Suppose I put one spring at the top and another spring at the bottom? Is that all right, Mr. Scofield?

XQ.380: That is all right, do as you see fit.

A. I am not the best when it comes to art work, but I will do the best I can.

XQ.381: Off the record, won't you cant that one above——

Mr. Lyon: We will have the whole statement on the record.

XQ.382: (By Mr. Scofield): Won't you cant the upper one in the other direction, so that the wire will extend in the same direction as the previous drawing on the "Doble-Acme"? A. Yes.

XQ.383: Now, in the lower coil you have not indicated it is canted at all, have you?

A. That is right. It might be a speck, but not very much.

XQ.384: And why didn't you cant that one?

A. Because I believe that some of them down below and up above don't appear to be canted, although [2642-204] they might be.

XQ.385: I would like to have you mark——

A. I have marked the one down below that certainly——

XQ.386: ——that does not look like it is canted?

A. That's right.



(Deposition of William A. Doble.)

XQ.387: I would like to have you draw a lead line to all of those that you don't think are canted, and mark them with the letter "X."

A. That is difficult to do, because you have got a perspective here in going around in a circle, and that is why it is hard to tell the cant and not the cant, because it is like taking this scratcher, and you get a distorted view of it. They look like they are canted, but they really aren't canted very much. Some of them are canted a little bit, so I don't think you can do that. I don't think what you are trying to get at is the true situation here. In other words, looking at Petitioner's Exhibit for identification HH, the coils certainly look like they are canted. They are not canted very much, and those——

XQ.388: I think you are perfectly right, and we will certainly try to get at the true situation.

A. That is true.

XQ.389: Now, you have indicated that the one you [2642-205] have marked "X" does not appear to you to be canted. A. That is correct.

XQ.390: Are there any others that do not appear to be canted in that whole scratcher?

A. Well, I would say that whole row up above do not appear to be canted, just very difficult to tell, on account of the perspective view.

XQ.391: All right. I want you to mark each one with the letter "X."

A. These are the ones that are——

Mr. Lyon: All you are marking "X" are not canted.

(Deposition of William A. Doble.)

The Witness: You can't tell whether they are canted or not.

XQ.392: (By Mr. Scofield): Don't mark them. I only want you to mark those that you think are not canted with the letter "X"

A. I will have to mark all of them.

XQ.393: What I am asking you, contained here in this question, is to mark on this Exhibit Z-1 all of the springs, all of the coil springs that appear to you not to be canted.

A. I started out to do that, and I marked practically all of them.

XQ.394: And then you said you didn't think you could tell. [2642-206]

A. You can't tell exactly.

XQ.395: Don't mark them.

Mr. Lyon: You said the ones that appear to him, and then you tell him not to mark it. Which do you want?

Mr. Scofield: I don't want him to mark any of them unless he thinks they appear not to be canted.

Mr. Lyon: He started to mark them that way, and you told him not to.

Mr. Scofield: All right, I don't want him to mark any that appear to be canted.

The Witness: Well, I am going to mark with "X's" those that appear to be canted.

Mr. Lyon: Not canted.

The Witness: Not canted, excuse me. After viewing the exhibit, Petitioner's Exhibit AA for identification, I would say that——

(Deposition of William A. Doble.)

Mr. Scofield: Now, just a minute. It will be noted that the witness has picked up and has viewed Exhibit AA, which is——

Mr. Lyon: The witness just stated he did.

Mr. Scofield: ——which is a physical exhibit of a scratcher that was made under his direction by Adams-Campbell, and he is now proceeding to mark the Exhibit Z-1——

Mr. Lyon: No, he is not. [2642-207]

Mr. Scofield: ——with the letter “X” where the springs appear to him not to be canted.

Mr. Lyon: No, he is not. He is not doing a single thing at the present time.

The Witness: I don’t know what you want me to do now. What is the situation?

XQ.396: (By Mr. Scofield): What I want you to do is this: I want you to mark the springs in Exhibit Z-1 which do not appear to you to be canted by the letter “X.”

A. I started out to do that.

XQ.397: All right, go ahead and do it.

A. Well, I will say this, that many of them I can’t tell because the photograph is not too clear.

Mr. Scofield: I move that be stricken as a volunteer statement.

XQ.398: All I ask you to do is mark with the letter “X” the——

Mr. Lyon: The witness is entitled to explain.

XQ.399: (By Mr. Scofield): ——the ones that are not canted.

(Deposition of William A. Doble.)

Mr. Lyon: The witness is entitled to explain his answer.

Mr. Scofield: And I am also privileged to move to strike.

The Witness: As I say, that is very difficult to [2642-208] do, Mr. Scofield, because of the character of the photograph. I have probably done the best I can under the circumstances.

XQ.400: (By Mr. Scofield): Now, will you mark those coils in Exhibit Z-1, which appear to you to be canted, with the letter "Y." You have done so?

A. I have done so, to some of them that appear on the front face of the scratcher body, yes.

XQ.401: Will you count the number that you have marked with the letter "X"?

A. Fourteen.

XQ.402: Will you count those that you have marked with the letter "Y"?

A. Well, at the present time I only have five of them, but—I don't know, I could include maybe a couple more. I am a little doubtful about them, but I now have seven.

XQ.403: In these interviews that you had during the making of these scratchers corresponding to Exhibit Z-1, did you mention to Mr. Kipper, Jr.—

A. Stewart Kipper.

XQ.404: —Stewart Kipper, that some of these coil springs did not appear to lie along a radial line?

A. No, I did not. I told him the coil springs were to be placed as closely as he could place [2642-209]

(Deposition of William A. Doble.)

them, as illustrated in the illustration of Petitioner's Exhibit Z-1.

XQ.405: And he did so—— A. He did so.

XQ.406: ——in preparing the——

A. That is correct, he did so in preparing the two exhibits, Petitioner's Exhibit AA and Petitioner's Exhibit HH, both for identification.

XQ.407: Was there ever any discussion during any of these meetings which you had with Stewart Kipper about the location or about the positioning of these coil springs with reference to their axis, and how they are laid with reference to the axis of the collar?

A. I have already answered that question.

XQ.408: And your answer is there was no discussion?

A. I told him to make the scratcher exactly like as shown in Petitioner's Exhibit Z-1.

XQ.409: But that does not quite answer the question. What I want to know is whether there was a discussion about the position of those coil springs?

A. No, I don't believe there was any particular——

XQ.410: You left it to him?

A. I left it to him.

XQ.411: You left it to him? [2642-210]

A. And he had the illustration before him and he made it, and that is the way he made it.

XQ.412: How do the wires extend in Exhibit AA with respect to the axis of those coils?

A. In what way do you mean?

(Deposition of William A. Doble.)

XQ.413: How do they extend with relation to the axis of the coils, how do the wires extend?

A. At an angular relation to the axis of the scratcher body.

XQ.414: No, but I am asking my question as to how those wires extend with respect to the axis of the coil?

A. They extend outwardly from the axis of the coil.

XQ.415: Yes, at about what angle?

A. From what?

XQ.416: From the axis of the coil they extend at a right angle or normal to the axis of the coil, or do they extend at some other angle?

A. Well, they extend fairly close to at right angles to the axis of the coil, the axis of the coil.

XQ.417: Do you want to look at that again?

A. No. The axis of the coil is not determined by each loop, because each loop of the coil is at an angle——

XQ.418: That is right. [2642-211]

A. ——with relation to its axis, and therefore, if you look at the axis, or try to look at the axis independently of the angle of each loop of the coil, I would say that the wires come out substantially at right angles to that axis.

XQ.419: You have not drawn that so in your “Doble-Acme” drawing, have you?

A. Substantially so. It is within a few degrees.

XQ.420: You drew it below, didn’t you?

A. Yes, I drew it below, but possibly I shouldn’t

(Deposition of William A. Doble.)

have drawn the coil on the axis. I drew it that way because you asked me to.

XQ.421: No, I did not ask you to.

A. Yes, you did. That is the way you told me to place the coil, the axis of the coil on the axis of the scratcher.

XQ.422: I told you to do that?

A. Yes, that is not the way all of these are. Some of these are inclined slightly, and in fact, most of them are.

XQ.423: But we are getting away from the question of the axis——

A. I had better correct the drawing a little bit. [2642-212]

XQ.424: I think so. Why don't you just erase it?

Mr. Lyon: No, no.

The Witness: I could draw another one down below.

XQ.425: (By Mr. Scofield): Yes. I want to indicate then that is not how it extends.

Mr. Lyon: Not how what extends?

The Witness: Yes, what extends?

XQ.426: (By Mr. Scofield): How the wire extends from the coil.

A. Yes, sir, it is the way the wire extends from the coil.

XQ.427: I thought in your previous answer you said that the wire appeared to extend at right angles to the axis of the coil. A. Yes.

XQ.428: You have not drawn it so, have you?

A. Not quite.



(Deposition of William A. Doble.)

XQ.429: I want you to draw it that way.

A. That is what I will do here.

XQ.430: Here is an eraser.

A. I am not going to erase, I am drawing it down below, so that we will have both views. Now, I have drawn the coil spring for the wire in the lower half portion of the sketch marked "Doble 3½ Acme," and I have placed the spring coil at a slight inclination [2642-213] from the extended diameter or from the diameter of the scratcher body portion, and have extended the wire from the outer end of that coil.

Mr. Lyon: Will you mark that line you have indicated as the coil axis as "coil axis" on this new sketch?

The Witness: Yes, sir, I have done so.

Mr. Lyon: That is on the sketch that you have been previously drawing?

The Witness: That I have just finished drawing, yes, and I will mark the wire "wire" like I did above.

XQ.431: (By Mr. Scofield): I would like to have you lay the Exhibit AA on the table before you so that it will be in a position similiar to that it was placed when the photograph was taken.

Mr. Lyon: Which photograph?

Mr. Scofield: Exhibit—do you recall the exhibit?

The Witness: No, I don't.

Mr. Lyon: Which photograph are you talking about?

The Witness: You have them there.



(Deposition of William A. Doble.)

XQ.432: (By Mr. Scofield): You want the 51½—

A. You handed me a 51½ scratcher, so that I should have the 51½ picture.

XQ.433: (By Mr. Scofield): Is it in evidence, a photograph of the 51½?

Mr. Lyon: Yes, you had one a minute ago looking [2642-214] from above.

The Witness: We have a number of them looking from above, Mr. Scofield.

XQ.434: (By Mr. Scofield): The 51½?

A. Yes, we have one in the ring, for example.

XQ.435: How about this?

A. That is the 51½ in the ring.

Mr. Lyon: What exhibit is that?

A. It is Exhibit V.

XQ.436: (By Mr. Scofield): Now, have you placed that scratcher—

Mr. Lyon: Better put it in the ring.

XQ.437: (By Mr. Scofield): —Exhibit AA in the position that it is shown in Exhibit V?

A. No, I have not.

XQ.438: Would you do so?

Mr. Lyon: Have you got it the right way, Mr. Doble, or is there any way to tell?

The Witness: No, that is the right way.

XQ.439: (By Mr. Scofield): Well, in order to remove the ring from this, let us put it in the position that it is in Exhibit W.

A. All right. Now, I have Petitioner's Exhibit

(Deposition of William A. Doble.)

AA in the position it appears to be in Petitioner's Exhibit W. [2642-215]

XQ.440: Then I want you to put your eye in the position of the camera lens as shown in Exhibit X.

A. Yes, sir.

XQ.441: Now, are you looking down directly upon the upper or the lower edge of the collar?

A. You are looking down on top of the upper edge of the collar.

XQ.442: The upper? Will you put your finger on the lower edge? A. Oh——

Mr. Lyon: Which do you mean by “upper” and “lower”?

The Witness: I thought you meant the lower ring or upper ring.

XQ.443: (By Mr. Scofield): Rotate this——

Mr. Lyon: You were correct.

XQ.444: (By Mr. Scofield): Rotate the collar so that it will correspond with the drawing Exhibit X you have in your hand.

Mr. Lyon: It is not a drawing.

XQ.445: (By Mr. Scofield): Photograph.

A. How do you want to place it?

XQ.446: Put it in the same position.

A. As far as I am concerned it is in the same position. [2642-216]

XQ.447: It is in the same position?

A. Yes.

XQ.448: And your eye, in order to be in the same position as the lens of the camera, is over the upper or lower edge, as I have pointed them out?

(Deposition of William A. Doble.)

Mr. Lyon: That is not a correct proposition as to upper or lower. The upper ring and upper side of the ring is on top and the bottom side of the ring is down. The other is an angle to which there can be no upper and lower. Let us have the record correct.

XQ.449: (By Mr. Scofield): You indicate, if you will, where your eye is supposed to be with reference to the camera lens.

A. My eye is supposed to be over the scratcher as shown in Petitioner's Exhibit AA for identification, as near as possible over the, directly over the peripheral surface of the body portion of the scraper, to the lower and left, as the photograph is taken in Petitioner's Exhibit X.

XQ.450: Will you just mark on the edge of the collar the point that you have indicated?

Mr. Lyon: What good will that be if the collar is rotated?

XQ.451: (By Mr. Scofield): Just indicate where the lens of the camera and your eye is to correspond with that. [2642-217]

A. As far as this particular question is concerned?

XQ.452: That is right.

A. Because as soon as you rotate or move my eye the place where I marked would just, of course——

XQ.453: That is all right.

A. Let us say right there.

(Deposition of William A. Doble.)

XQ.454: You have marked it directly over one of the coil springs, have you not?

A. Yes, I guess that would be about where it would be. That is where I have marked it, anyway.

XQ.455: Will you indicate with the straight edge that I hand you how the axis of that particular coil spring extends?

A. It seems to extend downwardly and at a slight angle, oh,—

Mr. Lyon: You cannot do it with a straight edge, can you?

The Witness: No. Something about like that, I would say. Now, if that makes any sense in the record, I will be surprised.

XQ.456: (By Mr. Scofield): And you have placed that so that the straight edge extends very nearly to diametrically across the ring, have you not?

A. Well, that depends on what you [2642-218] define as "very closely." It is considerably out from there, as I would see it. In other words, the spring is canted.

XQ.457: In two directions?

A. In two directions, and also the axis of the spring points downwardly toward the table upon which the body portion of the scratcher is mounted.

XQ.458: Now, will you take that straight edge and place it as close a position as you can to a right angle with the axis of that coil? A. Gosh—

XQ.459: Just get it the other way.

A. I will have to get my eyes in the same place.

(Deposition of William A. Doble.)

Mr. Lyon: Isn't that what you just did?

The Witness: No. Let me have the question.

(Question read by the reporter.)

XQ.460: (By Mr. Scofield): Put it on the opposite side, so that you can see the coil.

A. Then I can't gage it very well.

XQ.461: Gage it as best you can.

Mr. Lyon: Can you see the axis of the coil from where you are standing, Mr. Doble?

A. No, it is pretty hard.

XQ.462: (By Mr. Scofield): You can judge it, can't you, Mr. Doble? [2642-219]

A. I would judge this: That the wire sticking out is almost at right angles to that axis, if that is what you want to know, Mr. Scofield.

XQ.463: Yes, that is what I want to do. I wanted you to indicate whether or not that wire was at a right angle to the axis or whether it was at a little greater or less than a right angle to the axis.

A. Well, as best as I can guess it looks like it is just a little bit greater than a right angle, taking in the near side of the wire to the axis of the spring. That would correspond to the same as the angle of—well, no, it wouldn't, either, but it is pretty close to right angles, but not quite, as I would judge it.

XQ.464: Is it proper or accurate to say that these springs in the scratchers that were made by you or were made for you by the Adams-Campbell people, Exhibit AA and Exhibit HH, that the

(Deposition of William A. Doble.)

springs extend substantially at right angles to the axis of the coil?

Mr. Lyon: The springs?

Mr. Scofield: Yes, the wires.

Mr. Lyon: The springs extend substantially at right angles to the coil?

The Witness: I don't know what you mean.

Mr. Scofield: Read the question. Maybe I did misstate it. [2642-220]

(Question read by the reporter.)

XQ.465: (By Mr. Scofield): Do you want me to rephrase it? A. I wish you would.

Mr. Lyon: I would like to point out that the coils are formed of the same wire, so that let us not have any doubt in this matter.

XQ.466: (By Mr. Scofield): We can agree, I guess, that the coils are formed in the wire, can't we?

Mr. Lyon: The coils are formed in the wire, the coils are formed of the wire.

Mr. Scofield: You can agree to that, you will stipulate that?

Mr. Lyon: Yes, but you cannot say that the wires extend from the wire, and that is what you are saying.

XQ.467: (By Mr. Scofield): Now, let me see if I can say it. Is it accurate to say that the wires, the free ends of the wires, extend substantially at right angles to the axis of the coils in these particular scratchers?

(Deposition of William A. Doble.)

Mr. Lyon: Two free ends.

The Witness: I still don't think you have got that right, Mr. Scofield.

XQ.468: (By Mr. Scofield): I will try to rephrase it if you don't get it.

A. I get it, but—— [2642-221]

XQ.469: Is it accurate to say with respect to the scratchers made by Adams-Campbell that the free ends of the wires extend at right angles from the axis of the coils?

Mr. Lyon: Define "free ends of the wires."

The Witness: And you don't define what coils.

XQ.470: (By Mr. Scofield): There is only——

Mr. Lyon: Fifty of them.

XQ.471: (By Mr. Scofield): ——a coil in each wire.

A. Yes, but your question does not include the coil as part of the wire. It could be any coils.

XQ.472: There are no other coils except the coils that are in the wires here, are there?

A. I know, but I would rather have your question definite, so that when I answer we won't be in disagreement on it.

XQ.473: I don't want you to have any doubt on it. Is it accurate to say that the wires extend from the coils which are in each wire at right angles to the axis of the coils?

A. Yes, I think I can agree with that statement, substantially. You put it "substantially."

XQ.474: Yes.

A. They all are not the same, they all vary a

(Deposition of William A. Doble.)

little bit; just generally I would say that were the [2642-222] case.

XQ.475: Now, do you think that that is true with regard to the Exhibit Z-1? A. Yes, I do.

XQ.476: All right. Then let us draw an axis through that upper coil.

A. What do you want me to do?

XQ.477: I want you to draw an axis through that upper coil that you have shown on the right-hand side. A. I have drawn what——

XQ.478: Take the straight edge.

A. No, I can do it free-hand.

XQ.479: You took a straight edge on the other, you had better do it on this. A. O.K.

XQ.480: You have drawn a dotted line in answer to the previons question, which is the axis of the upper coil, have you not? A. I have.

Mr. Lyon: Better mark it.

XQ.481: (By Mr. Scofield): Mark it "axis of coil." Now, over on the other drawing here won't you also mark the vertical line as the "axis of coil"?

A. That was your axis. I don't accept that.

Mr. Scofield: All right. [2642-223]

Mr. Lyon: You don't accept it as the axis of the coil, so why mark it?

The Witness: I will mark it "Scofield axis."

XQ.482: (By Mr. Scofield): You are not going to accept this drawing here as a drawing of the Exhibit AA?

Mr. Lyon: No.

The Witness: That was not what we drew.



(Deposition of William A. Doble.)

XQ.483: (By Mr. Scofield): What?

A. That wasn't what we drew.

XQ.484: Was not what you drew? A. No.

XQ.485: Then I want you to take another sheet of paper and I want you to draw that for me; I thought we had identified these by exhibit numbers here.

Mr. Lyon: This drawing obviously does not correspond to Exhibit AA.

Mr. Scofield: I don't want any instruction.

Mr. Lyon: It is not instruction at all.

Mr. Scofield: I don't want any instruction. I must want him, if that is not what he drew for this particular——

Mr. Lyon: No, he did not.

XQ.486: (By Mr. Scofield): Take another sheet and start over.

A. Gosh, can I have about a five-minute recess? [2642-224]

Mr. Lyon: What you drew, first, Mr. Doble——

Mr. Scofield: Don't tell him what he drew first.

Mr. Lyon: I am asking him a question.

Mr. Scofield: Just ask him what he drew.

Mr. Lyon: What did you draw first, what did you draw in the right-hand side?

The Witness: The 5½ Acme scratcher.

Mr. Lyon: That is right.

Mr. Scofield: That is right.

Mr. Lyon: What he is asking you is: Is that a drawing of the 5½ inch scratcher.

Mr. Scofield: You do this on redirect examina-

(Deposition of William A. Doble.)

tion, anything you want to ask on redirect, and go into it, but don't interrupt, please.

Mr. Lyon: I want to have the record clear, and prevent us from confusing it at any time.

Mr. Scofield: But you do it on redirect examination.

Mr. Lyon: No, I won't. I will do it when I want to.

Mr. Scofield: Don't interrupt.

Mr. Lyon: I certainly will.

Mr. Scofield: Don't interrupt.

Mr. Lyon: I will correct any obvious error at the time.

XQ. 487: (By Mr. Scofield): State, if you will, what [2642-225] the drawing is on the left-hand side of the sheet. A. What the drawing is?

XQ.488: Yes, what is that drawing?

A. Well, it is a couple of circles with a couple of springs and a couple of lines.

XQ.489: You don't want to identify that as being any one of the scratchers or as showing any of the scratcher wires in any of the exhibits that are here on the table?

A. Yes, I have already identified it as in some respects the 3½ inch Acme.

XQ.490: And you have indicated that it is the "Doble-Acme"? A. That is right.

XQ.491: And you have also marked in the upper right-hand corner certain exhibits, have you not?

A. That is correct.

XQ.492: What did you do that for?

(Deposition of William A. Doble.)

A. Because you asked me to.

XQ.493: Is that the only reason?

Mr. Lyon: Yes.

The Witness: Yes, I certainly wouldn't have  
have done it if you hadn't asked me to.

Mr. Scofield: We will have to start all over.

The Witness: Can I have a five-minute  
recess? [2642-226]

Mr. Scofield: Sure.

(A short recess was taken.)

The Witness: I am not a very good artist or  
free-hand draftsman, and I hesitate to make draw-  
ings because I realize they are not accurate and they  
might give a misconception of what the actual struc-  
tures here show.

XQ.494: (By Mr. Scofield): Yes, but of course,  
you did not have an accurate drawing to go by to  
make these devices, did you?

A. None of the devices would be accurate, I  
mean they all vary, every one of them, so that—

XQ.495: But the photograph which you handed  
to Stewart Kipper was at best very rough, was  
it not?

A. It wasn't too good, no. It was very difficult  
to work from, I will agree.

XQ.496: Are the drawings you are making as  
good as the photographs or not, or as good as the  
photograph— A. No.

XQ.497: —Exhibit Z-1?

A. I wouldn't say they were. I would rather

(Deposition of William A. Doble.)

rely on Exhibit Z-1 and on the structures. We have got the structures here, we have got the photograph, but I don't think my sketch can add anything to it.

XQ.498: We have here the actual device that was produced—— [2642-227]

A. That is correct.

XQ.499: ——and what I want you to do is to make a drawing of this Exhibit AA, or the smaller size probably would be easier to get on the paper, the 3½ inch, which is Exhibit HH, showing the location and positioning of the one scratcher.

A. Well, I can't do that.

XQ.500: One scratcher wire.

A. I can't do that very well, Mr. Scofield, because no two of these coils are exactly alike, if I draw one, and it is different from the others. I hesitate to do that, because I can't see that it can be of any material value to the Patent Office or to you or to anyone else. An accurate sketch that I might make wouldn't be representative of but one, with many around here, thirty-six different points. They are all different. How am I going to make a sketch showing thirty-six different——

XQ.501: Your answer is you don't think you can make one?

A. I don't think I could make one that would do the Patent Office any good. I can draw a line for you, but I don't think they would be worth anything to the Patent Office or to you.

XQ.502: In other words, you don't think you can [2642-228] make one?

(Deposition of William A. Doble.)

A. That is right, as I say, that will not be of any value to anyone.

XQ.503: Let us determine whether it will be of any value.

Mr. Lyon: That is objected to as secondary evidence. The primary evidence is in evidence already, and the production of a sketch that the witness says cannot be accurate is objected to as calling for the production of secondary evidence when the primary evidence is available.

XQ.504: (By Mr. Scofield): I would like to have you put in a scratcher wire which is at right angles to the axis of that upper coil in the right-hand view.

A. Do I have to do that, Mr. Lyon?

Mr. Lyon: What is that, "Put in a scratcher wire"?

XQ.505: (By Mr. Scofield): If you don't, I am going to.

Mr. Lyon: Go ahead and draw.

The Witness: It will be your sketch, not mine.

XQ.506: (By Mr. Scofield): You refuse to do it?

A. I don't refuse to do it.

XQ.507: Well, then do it. Do you want to do it or not? A. I don't want to do it.

Mr. Lyon: What is the purpose? [2642-229]

Mr. Scofield: It does not have to have a purpose to it. I would like to have it on this sketch.

The Witness: I would rather you would make it, because as I say, you have got thirty-six different wires, thirty-six different coils, and those coils

(Deposition of William A. Doble.)

project differently from the different holes. There are different inclinations through the different holes in two directions, and I just don't know how——

XQ.508: (By Mr. Scofield): Of course, that can't be the reason because I am not asking you to do anything. You have done it?

A. Yes, but you are going to relate it to this.

Mr. Scofield: No.

Mr. Lyon: If it has no relation to this one, Mr. Doble, draw it, it being understood that this drawing has no relation to any structure.

XQ.509: (By Mr. Scofield): It does not have any relation to that whatsoever, but you draw this.

Mr. Lyon: It does not have any relation to what?

Mr. Scofield: It does not have anything to do with the Exhibit HH.

Mr. Lyon: Then what is the materiality of it?

Mr. Scofield: The materiality, of course, is obvious. [2642-230]

Mr. Lyon: No, it is not.

Mr. Scofield: You wish it explained?

Mr. Lyon: Yes.

XQ.510: (By Mr. Scofield): You indicated, did you not, in your testimony, that the wires extended at right angles to the axis of the coils in Exhibit HH?

A. Substantially so. They don't all, but they are—— [2642-231]

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XQ.514: You have also indicated that the wires in Exhibit Z-1 extend substantially at right angles to the axis of the coils, have you not?

(Deposition of William A. Doble.)

Mr. Lyon: No. [2642-232]

The Witness: I don't think I so testified.

XQ.515: (By Mr. Scofield): It is in the record; you testified to it.

Mr. Lyon: You are arguing with the witness, or asking him?

Mr. Scofield: I am telling him.

Mr. Lyon: Certainly you are arguing with him.

Mr. Scofield: I am just telling him it is in the record, and we can go back and read it.

Mr. Lyon: Ask him what his testimony is, and don't tell him.

Mr. Scofield: I asked him whether he testified to that.

Mr. Lyon: No, you did not. You tried to tell him.

Mr. Scofield: I asked him that first.

Mr. Lyon: And then you tried to tell him.

Mr. Scofield: He said he did not recall, and then I said he had testified to it, and if he wished corroboration we will go back and read the question.

The Witness: I don't believe I so testified, and I might say that I am not too sure that—well, I will say this: They are not as—they are all so different it is hard to make any—I cannot make an accurate statement in regard to it. The wires and the coils are so indistinctly shown here I wouldn't want to go on [2642-233] record as saying that they are—I will say that they are somewhere near it, but that is about as close as I can get.

XQ.517: (By Mr. Scofield): Then why do you go before this tribunal and state that these exhibits

(Deposition of William A. Doble.)

that you have made are a reproduction of this?

A. They are a reproduction of Petitioner's Exhibit Z-1 with 4-inch wires and not 3-inch wires.

XQ.517: All right.

A. That makes a difference in the angulation of the wires.

XQ.518: All right, but you have said that they are a reproduction, have you not, except——

A. They are.

XQ.519: ——for the length of the wires?

A. They are.

XQ.520: Do you know that those are 3-inch wires in Z-1?

A. As far as we could determine, that is what they appear to be, 3-inch wire.

XQ.521: How did you determine that?

A. Well, that again was very difficult to determine, because a photograph of this type it really should not be scaled to measure it.

XQ.522: You have indicated that you did determine [2642-234] that they were 3-inch wires?

A. No, I didn't. I said that is what we believed they were.

XQ.523: They may be 4-inch?

A. I don't think so, but anyway, we made it 4-inch, and there is the result of what these are. It speaks for itself.

XQ.524: And the attempt that you made is before you as Exhibits AA and HH?

A. Pardon me, I do not care for the inference "attempt." We actually made a reproduction as



Deposition of William A. Doble.)

close as we could to Petitioner's Exhibits Z and Z-1.

XQ.525: That is right.

A. And no "attempt." It was an actual structure made.

XQ.526: If you did that, then you can draw, can you not, how the wire extends in Z-1?

A. No, we didn't make Z-1, and——

XQ.527: I thought you made Z-1?

A. No, we didn't make Z-1. We made a scratcher similar to Z-1, but with 4-inch wires instead of 3-inch wires.

XQ.528: Oh, oh, then you didn't make the scratcher Z-1 at all?

A. Yes, we did. [2642-235]

XQ.529: Then I misunderstood.

A. We made the 4-inch wires instead of the 3-inch wires, Mr. Scofield.

XQ.530: You made the Z-1 scratcher with——

A. 4-inch wires.

XQ.531: ——4-inch wires? A. Yes.

XQ.532: And you did not know whether those were three or 4-inch wires, so you may have made Z-1? A. No, I don't think so.

XQ.533: You don't think so?

A. I think, as close as we could figure, those were 3-inch wires, but I could not say for sure, I mean a photograph like that it is almost impossible to take any dimensions from and have them accurate.

XQ.534: If you thought that the wires in Z-1 were 3-inch, why did you make these 4-inch?

A. Because in Petitioner's Exhibit Z it is stated.

(Deposition of William A. Doble.)

that the bristles are made of 15-gage steel, spring steel, in 3 and 4-inch lengths, so I felt, to make the best demonstration the 4-inch lengths would be better than the 3-inch length.

XQ.535: But you thought, did you not, that the wires shown in Z-1 were 3-inch length?

A. Yes. [2642-236]

XQ.536: And then you chose to make a 4-inch length of wire? A. That is correct.

XQ.537: Now, my question is: Why did you choose the 4-inch instead of the 3?

A. Because I thought it would make a better exhibit.

XQ.538: How did you come to that conclusion?

A. Because the longer the wires, the better you can see what is there, and better gage.

XQ.539: What do you mean by "better gage"?

A. You got a longer wire to gage from.

XQ.540: What do you mean by "gage"?

A. To sight from or see which direction it is going.

XQ.541: Then you are able, by the 4-inch wires, to get a better idea, are you, as to how the wires extend from the coils?

A. I think that is evident.

XQ.542: You have indicated that the wires extend substantially at right angles to the axis of the coils in the two exhibits that were made by Adams-Campbell?

A. Yes, that is correct, substantially so.

XQ.543: And you attempted to make those as

(Deposition of William A. Doble.)

close as you could to the wires that are shown in Exhibit Z-1? [2642-237]

A. Excepting for the length.

XQ.544: Excepting for the length?

A. Yes.

XQ.545: But you did make them extend, that is, you did determine that those extend at right angles to the coils in Z-1 and Z?

A. I believe so. Well, of course, there is another condition we had in making the 3½ inch scratcher, of which Petitioner's Exhibit HH for identification is the embodiment. The outer ends of the wires had to fit within an 8¼ inch diameter, so that governed, to a certain extent, the angulation of the wires, and in the 5½ inch scratcher, Petitioner's Exhibit AA, the outer ends of the wires had to set within a 10¾ inch circle, and of course, that would change the angulation of the wires.

XQ.546: But if——

A. Pardon me, I haven't finished, and changing the angulation of the wires as far as the axis of the coils.

XQ.547: But after looking over these two exhibits Z and Z-1, you came to the conclusion, did you not, that the wires extended at substantially right angles from the axis of these coils?

A. May I have that question, please? [2642-238]

(Question read by the reporter.)

The Witness: Well, as near as we could determine, yes.

(Deposition of William A. Doble.)

XQ.548: (By Mr. Scofield): Did you or didn't you?

A. We did, yes. I said as near as we could determine. Every one is a little bit different, you see, with the——

XQ.549: We are not quibbling about this thing.

A. I know it, but generally——

Mr. Lyon: Apparently you are.

The Witness: As I say, we determined that the axis of the coils were substantially or nearly perpendicular to the wires.

XQ.550: (By Mr. Scofield): I want you to be sure about this, because it is important. After looking at this Z and Z-1—— A. Yes.

XQ.551: ——did you come to the conclusion that these wires extended at substantially right angles from the axis of the coils?

A. Yes. [2642-239]

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Mr. Scofield: I do not want to get my version of this at all. We have got to determine what conclusion you came to as to how these wires extended from the axis of the coils.

The Witness: We didn't have to make a determination [2642-240] along that line.

XQ.553: (By Mr. Scofield): You did not?

A. We made the coils, the wires project nearly perpendicular to the axis of the coils, and the outer free ends of the wires engage the inner periphery

(Deposition of William A. Doble.)

of the gage ring, which is the diameter as specified in the exhibit Petitioner's Exhibit Z.

Mr. Scofield: Now, read his answer.

(Answer read by the reporter.)

XQ.554: (By Mr. Scofield): So you made the wires so that they were perpendicular to the axis of the coils?

A. Reasonably so. There is a variance in all of these. You are trying to get something exact, and there is nothing exact about these.

XQ.555: No, I am not. I am just trying to get your version. I don't care whether it was exact or how it was.

A. I have given you my version of it.

XQ.556: Your version is that what you determined from looking at Z and Z-1 was that these wires extended perpendicularly to the axis of the coils?

A. Within certain limits, yes; that is, that could be a starting point, and then they vary. Each one varies somewhat from the one on either side.

XQ.557: Well, how much? [2642-241]

A. I don't know, I didn't measure them. You can look at it and you can see.

XQ.558: Now, I want you to do that because that was the thing that was given to this manufacturer to make.

A. What was given to the manufacturer to make?

XQ.559: This Exhibit Z and Z-1, as I understood it.

(Deposition of William A. Doble.)

A. That is correct, with the specification that they should be provided with 4-inch wires, and that the outer ends of the wires should be of certain specific diameters. Now, that changes the location and arrangement of the coils, and also changes the angle of the wires with relation to the peripheral surface of the collar of the scratcher body.

XQ.560: So you left it up to him to determine what the angularity was of the wires to the axis of the coil? A. No.

XQ.561: You did not leave it up to him? You did or you did not?

A. I don't remember whether I definitely told him that they should be or shouldn't be.

Mr. Lyon: Should be or shouldn't be what?

The Witness: Perpendicular, the wires perpendicular to the axis of the coils. I was more interested, primarily, really, having the wires the proper length and [2642-242] having the coils mounted, and it would be a matter of geometry as to how some of those relationships would work out with the increased length in the wires. I did not lay it out for him in a drawing and tell him, "you make this."

XQ.562: Then the fact is that you did not give him any instructions as to how the wires should extend from the axis of the coils?

A. I did not say that. I said I didn't remember making any such instructions. You said, "Definitely."

XQ.563: Do you remember?

(Deposition of William A. Doble.)

A. I don't remember giving him any instructions.

XQ.564: You might have given him instructions or you might not?

A. Yes, I will go with that. I might have or I might not, I don't remember.

XQ.565: In any event, he finally showed up with these two exhibits; is that correct?

A. Well, I wouldn't say he showed up with them.

XQ.566: What would you say?

A. I went down, and he had them finished, and I examined them and they appeared to be just what I wanted. [2642-243]

XQ.567: Did you at that time test the angularity of the wires with respect to the axis of the coils?

A. I did not.

XQ.568: You did not?

A. No. I looked the whole thing over, and it looked all right to me, and I accepted it. [2642-244]

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XQ.572: When they finally delivered these two exhibits, AA and HH, you found, did you not, that the wires extended perpendicularly or at right angles to the axis of the coils? [2642-245]

A. I don't know, I didn't measure them.

XQ.573: You did not measure them?

A. No.

XQ.574: Have you measured them since?

A. No, excepting by eye, trying to guess at it.

(Deposition of William A. Doble.)

XQ.575: You did measure them by eye this afternoon, didn't you?

A. Yes, I took a look at it. I don't know how accurate it is, but I looked at it, and it appears to me that they are in some cases perpendicular to the axis and others slightly off one direction, and others slightly off the perpendicular in the other direction.

XQ.576: Did you attempt to draw them this afternoon?

A. You had me drawing something. I am not too sure just what we were drawing.

XQ.577: You don't know now what we were drawing?

A. Yes, we were making some lines which were purported to be "Doble 3½ inch Acme" of which you dictated certain of the lines that I was to draw, so I drew them.

XQ.578: Is it your position now that you do not want to accept the drawing which has been marked "Doble-Acme" as a drawing which was made by you here this afternoon? [2642-246]

A. No, I didn't say that. I don't want to accept your portion of it. I will accept the lower portion of it.

XQ.579: What do you accept the lower portion as?

A. Oh, as representing—it is not accurate, that is the trouble with it, it is not accurate—it is an indication of the relationship between one coil to the wire, and then it is only a guess, of Petitioner's HH for identification.



(Deposition of William A. Doble.)

XQ.580: Is it as accurate as Z or Z-1?

A. Well, Z and Z-1 is a photograph. It is accurate as a photograph, but it is something you cannot measure unless you rotate it in the true plane.

XQ.581: Is Z or Z-1 accurate geometrically?

A. Well, as far as they go, they are, but you have got to put them in the plane where you can measure them. They are perspective, and you cannot measure perspective and get a true reading.

XQ.582: Then you think Z and Z-1 are relatively accurate geometrically?

A. Well, what do you mean by "geometrically"?

XQ.583: I mean, you could determine from the photograph the geometric angularity of the wires or the positioning of the axis of the coils or other geometric determinations from that [2642-247] photograph?

A. You can, and then again you can't, but the enlargement of the cut in Petitioner's Exhibit Z is missing in spots, and it is not too clear, but, of course, it originally was a photograph of one of the Acme wall cleaning scratchers.

XQ.584: Are you ready to admit that it is all we have?

A. That, plus the description in Petitioner's Exhibit Z.

XQ.585: That is right.

A. Well, all I had before me when I instructed the Adams-Campbell Company to make a scratcher like the exhibit, with the exception of the length of the wires.

(Deposition of William A. Doble.)

XQ.586: What did you have before you when you made the drawing on the left-hand side of the sheet that you have before you, do you recall?

A. I don't remember what I had before me now. You were telling me what to do, and I was doing what you were telling me.

XQ.587: Do you recall when you made that drawing that you had any photograph before you?

A. I don't know if I referred to photographs or to the scratcher, Petitioner's Exhibit HH.

XQ.588: You don't recall? [2642-248]

A. I don't recall now which I referred to. It seems to me it was a scratcher I referred to more than the photographs, because the exhibit itself is there, and it is something tangible. The photographs are very deceptive.

XQ.589: It was in the early part of the afternoon. What I am asking you is what you had before you when you made that diagram?

A. I just told you I had before me Petitioner's Exhibit HH for identification.

XQ.590: You think you made that from Petitioner's Exhibit HH?

A. No, I don't remember exactly. You were telling me what to do and I was trying to do it, and I don't remember now.

XQ.591: You don't remember what you did?

A. No.

XQ.592: Now, are you ready to sketch in for me the wire which is perpendicular to the axis in the right-hand view?

Deposition of William A. Doble.)

A. First, I would have to ask what am I supposed to be illustrating, Petitioner's Exhibit HH, Petitioner's Exhibit AA, or Petitioner's Exhibit Z?

XQ.593: Well, I thought we had gone over that, but I will refresh your recollection on it. [2642-249]

Mr. Lyon: Just ask the witness the question. Don't try to——

XQ.594: (By Mr. Scofield): As I recall, we had Z-1 before you when we made that sketch, did we not?

Mr. Lyon: That the witness has said he does not recollect.

The Witness: There was so much confusion at that time that I really don't recollect, and I wouldn't, I am sure, draw the size of the circle the same as the 3½ Acme for a drawing, and illustration of a 5½ inch Acme.

XQ.595: (By Mr. Scofield): Well, are you getting tired? Do you want to quit now?

A. No, I can go on forever, if you want to.

XQ.596: Oh, sure. It doesn't make any difference. What I want you to do now, then, is make for me a drawing, a diagram of the Z-1 scratcher on a second sheet——

Mr. Lyon: That is objected to as calling for secondary evidence.

XQ.597: (By Mr. Scofield): ——looking down from above.

A. We don't have a photograph looking down from above.

XQ.598: No, but I want you to do as best you can.

(Deposition of William A. Doble.)

A. That is not going to be very good. [2642-250]

XQ.599: We will take a chance on it.

Mr. Lyon: Of what?

XQ.600: (By Mr. Scofield): Of the Z-1.

A. Now, what do you want me to do?

Mr. Lyon. Do you think you can draw a plan view, looking down on Z-1?

XQ.601: (By Mr. Scofield): Showing one wire scratcher as we did on this left-hand view?

A. No, I don't think I could do it.

XQ.602: You don't think you can?

A. I would prefer to have a full view of the scratcher, because in trying to interpolate from a perspective view, it is most difficult, and my drafting isn't too accurate anyway, and I don't think that it would be worth anything.

XQ.603: You don't want to do that?

A. No, I don't want to do that. I don't think it would be helpful to you or the Patent Office.

XQ.604: Don't worry about me.

A. Yes, I do. I would like to help you, if I can.

XQ.605: You just worry about whether it will assist the Patent Office.

A. I am sure it wouldn't assist the Patent Office one darned bit. [2642-251]

XQ.606: In other words, you don't want to do it? A. No, I don't want to do it.

XQ.607: You don't want to do it?

A. I don't want to do it.

XQ.608: Would you put in the wire at a right

(Deposition of William A. Doble.)

angle or perpendicular to the axis of that coil in the right-hand view?

A. If you instruct me to draw two lines, I can draw two lines, but they will be your lines, and nothing I am trying to refer to anything as being——

XQ.609: I would like to have you draw in a wire which is perpendicular to the axis of that upper coil.

A. And this is not related to any of the exhibits here before me?

XQ.610: You are not questioning me. I am just asking you to do that.

A. I have got to know how to do it.

XQ.611: No, all I want you to do is just put the wire in there. You can do it as you see fit, that is up to you.

A. I would rather not do it, because I don't know what I am doing. I don't know what the purpose is.

XQ.612: Yes, you know what you are doing——

A. No, I don't.

XQ.613: ——in putting in a wire [2642-252] which is perpendicular to the axis of that upper coil.

A. Yes, but I don't know what the coil represents. Where is the coil from?

XQ.614: The coil has already been put in there, and let us not go through that again.

A. Let's go through this, that is what I want to know.

XQ.615: Why did you put that coil in?

(Deposition of William A. Doble.)

A. Because you told me to put in a coil.

XQ.616: Was that the reason you put that in?

A. Yes.

XQ.617: And the only reason?

A. And the only reason, that is right.

XQ.618: That is the only reason?

A. I wouldn't make any drawings unless you insist I make them.

XQ.619: When I requested you to make them you mean you did not make it yourself?

A. No, I said I would make it only on your request.

XQ.620: You don't recall why you made this mark on the drawing?

A. No. As I say, there was so much confusion I don't remember why that was and what it related to.

XQ.621: Do you want to put that [2642-253] wire in or not?

A. Well, if you want me to draw a wire in there which does not relate to anything, I am willing to draw two lines which may represent a wire.

XQ.622: I asked you to put a wire in there at right angles to that axis.

A. That is easy, but I want it understood it has no relation to any of the exhibits.

Mr. Scofield: The record will show what it has relation to.

Mr. Lyon: The Witness' testimony is the best evidence of what it has relation to. We don't maintain it has any relation to anything.

(Deposition of William A. Doble.)

The Witness: I mark "Scofield wire" and I put in two lines, and so label it.

XQ.623: (By Mr. Scofield): Will you designate that as the "Hall Acme" for me at the top or bottom, as you see fit?

A. You want me to write that statement?

XQ.624: I told you to write "Hall Acme."

A. It has no connection with any—

XQ.625: All I am doing is directing you to put "Hall Acme" on it.

A. Following your instruction, I will write the words.

Mr. Lyon: Put it in the bottom, the same place as [2642-254] you put it in the other, so that it will correspond to that designation.

The Witness: This is against my will, and it has no relation to any of the exhibits which we have before us. I am merely writing words Mr. Scofield has directed that I write on the piece of paper. I don't agree with it, and if he wants that, it is all right.

Mr. Scofield: I move that the statement be stricken as non-responsive to the question that has been asked.

Mr. Lyon: The witness certainly can explain why he did something that you told him to do.

Mr. Scofield: I would like to have the reporter now mark the diagram or the sketch that has been made by this witness as Applicant's Exhibit 11.

(Deposition of William A. Doble.)

(The sketch referred to was marked by the Notary Public as Applicant's Exhibit 11, and made a part of this deposition.)

Mr. Scofield: I am offering this sketch marked Applicant's Exhibit 11 in evidence.

Mr. Lyon: I will object to it as incompetent, irrelevant, and immaterial, and merely a self-serving statement by Mr. Scofield, and something that the witness has disaffirmed in its entirety.

Mr. Scofield: I think the record will [2642-255] show what the sketch is better than the statement of counsel, so I will leave it to the record [2642-256] to show.

\* \* \*

The Witness: Mr. Scofield, I am able to produce a scratcher which appears to be the same as the scratcher shown in Petitioner's Exhibit YY, that is, as best I can remember. The wires may be of different diameter, but I believe it is the same scratcher as shown in Petitioner's Exhibit YY.

XQ.637: (By Mr. Scofield): What size scratcher is that?

A. The scratcher which I have just——

XQ.638: Produced?

A. ——produced is a 5½ inch scratcher.

XQ.639: What is the length of the wires?

Mr. Lyon: Mr. Doble, I want to ask [2642-262] you one question. This scratcher that you have produced is equipped with No. 16 gage wire, is it not?



(Deposition of William A. Doble.)

The Witness: Well, it appears to be about a 16-gage. It is .064 inches in diameter.

Mr. Lyon: The 15-gage wire is .072, I believe?

The Witness: It is somewhere in that neighborhood, yes.

Mr. Lyon: Do you know whether the one of photograph YY is a 15 or 16-gage wire?

The Witness: I could not tell from the photograph. I do not know.

Mr. Lyon: But you do believe that this scratcher you have in your hand is a duplicate of the one shown in Exhibit YY, with the possible exception of the size of the wires?

Mr. Scofield: I object to statement by counsel.

XQ.640: What I want you to tell me, Mr. Doble, is whether the scratcher you have produced is the scratcher that is shown in Exhibit YY.

A. May I answer Mr. Lyon's question first?

Mr. Lyon: Answer them both.

(Question read as follows: "But you do believe that this scratcher you have in your hand is a duplicate of the one shown in Exhibit YY, with the possible exception of the size of the wires?") [2642-263]

The Witness: That is correct. Mr. Scofield's question?

(Record read as requested.)

Mr. Lyon: Which question do you want him to answer?

(Deposition of William A. Doble.)

XQ.641: (By Mr. Scofield): Answer the last one. You have answered Mr. Lyon's question first.

A. As far as I can tell, it is, but I can't measure the gage of the wire in a photograph.

XQ.642: And you have answered my question as to the size of the scratcher?

A. Yes,  $5\frac{1}{2}$  inch.

XQ.643: And I don't believe you have answered my question as to the length of the wires.

A. No, Mr. Lyon; have you that tape?

Mr. Lyon: Mr. Doble, where you were referring to these scratchers as  $5\frac{1}{2}$  or  $3\frac{1}{2}$ , state whether or not you are referring to the casing size,  $3\frac{1}{2}$  inch casing and  $5\frac{1}{2}$  inch casing.

The Witness: That is correct.

Mr. Lyon: Isn't it marked on the inside?

The Witness: You asked me for the length of the wire?

XQ.644: (By Mr. Scofield): I asked you for the length of the wire.

Mr. Lyon: There is no way, I don't think it is possible for anybody to measure the length of those [2642-264] wires. If you want the total length of the wire——

Mr. Scofield: The Witness has got a rule in his hand and has been measuring them. If counsel will permit him to complete his answer to the question and not attempt to instruct him in the guise of an objection, I would very much appreciate it.

Mr. Lyon: I am not attempting to instruct him,

(Deposition of William A. Doble.)

but it is obvious that the wire has a bend in it and he has not got a bent ruler. You are asking how far they extend out from the collar, or the total length of the wire? Which do you want?

Mr. Scofield: He is going to answer the question.

The Witness: It won't be very accurate. Oh, very, very roughly I would say that the length of each of the wires is substantially 6½ inches.

XQ.645: (By Mr. Scofield): You have attempted, in answering the last question, to measure the length of the wire from the collar, and then you have put the rule on the curve to take the length of the wire, including the straight part and the curved part, have you not?

A. Your question is not clear, Mr. Scofield, because we have two turns in the wire. We have a turn out at one end of the wire there and then we have an arcuate section which follows the periphery of the cylindrical portion of the body of the scratcher. [2642-265]

XQ. 646: Now, will you measure the length of the wire from the collar to the tip end of one of the wires?

Mr. Lyon: Let me have that question.

(Question read by the reporter.)

Mr. Lyon: What part of the collar? I object to the question until it is made definite the inside or outside, or what.

XQ.647: (By Mr. Scofield): The outside surface of the collar.

(Deposition of William A. Doble.)

A. Well, do you mean—I still don't understand it. Do you mean from the point where the wire last touches the peripheral portion of the cylindrical body of the scratcher, or just a radial line directly outwardly from the peripheral portion of the scratcher body?

XQ.648: Do the wires extend out radially?

A. Yes.

XQ.649: What is the result then along the radial line?

A. It will only be an approximation, because I have two corners to go around, and it is very difficult to do with a rigid ruler; about  $2\frac{1}{2}$  inches, and that is a very rough measurement.

XQ.650: Is it your belief now that you have measured along the radial line? [2642-266]

A. Part of it is along a radial line.

XQ.651: I didn't ask you that. Have you measured along the radial line?

A. Yes, part of the part there is maybe on the radial line. Most of these are reasonably close to the radial line.

XQ.652: Can you measure the length of that wire from the outside surface of that collar to the tip end of one of the wires along a radial line?

Mr. Lyon: I object to the question as an improper question, very confused. You cannot measure the length of the wire in the direction he is talking about. You can measure the extent of the wire, the distance the wire extends out.

(Deposition of William A. Doble.)

Mr. Scofield: Read him the question.

(Question read by the reporter.)

Mr. Scofield: Let it be indicated on the record that the witness has a ruler in his hand and is studying very intently the scratcher which he has before him.

The Witness: Well, I will have to state that for a portion of the distance from the periphery of the cylindrical portion of the scratcher outwardly to the end of the wire there is a portion of the wire length which does not travel along a radius, a radial line, and therefore, I don't see how I can measure the length of [2642-267] the wire along the radius from the collar, because a part of the wire does not extend on a radial line.

XQ.653: (By Mr. Scofield): Well, now, after that statement can you answer the question?

A. I just answered, I just told you your question is not clear enough for me. I can't.

XQ.654: You can't make that measurement?

A. That is correct, as you have defined the question.

XQ.655: Do you know whether the scratcher you produced is a standard scratcher?

A. No, I do not.

XQ.656: You don't know that?

A. No, I don't.

Mr. Scofield: It is requested that the reporter mark the scratcher which has been produced by the

(Deposition of William A. Doble.)  
witness as Applicant's Exhibit 15, and the same is offered in evidence.

(The scratcher referred to was marked by the Notary Public as Applicant's Exhibit 15, and made a part of this deposition.)

XQ.657: (By Mr. Scofield): Applicant's Exhibit 14 was used in the test machine, was it not?

A. Yes, sir.

XQ.658: In what size cylinder was that scratcher [2642-268] used?

A. You mean by "size of cylinder" the internal diameter of the cylinder?

XQ.659: Yes, I think that is the way we designate it, don't we?      A. Yes;  $6\frac{7}{8}$  inches.

XQ.660:  $6\frac{7}{8}$ ?      A. Yes, sir.

XQ.661: Is there in evidence a trace or a pattern made by that scratcher?      A. No, sir.

XQ.662: There is not?      A. No, sir.

XQ.663: Was Applicant's Exhibit 15 used in the test machine?      A. Yes, sir.

XQ.664: Is there a trace in evidence showing the trace pattern made with that scratcher?

A. No, sir.

XQ.665: What is the trace pattern shown on the cylinder which is photographed and offered as Petitioner's Exhibit AAA-1 and AAA-2?

A. The scratcher used in producing these scratch marks on the internal diameter of the half cylinders illustrated in Petitioner's Exhibits [2642-269] AAA-1 and AAA-2 was a standard B & W wall

(Deposition of William A. Doble.)

cleaning guide taken from stock at their place of business in Long Beach. It was similar to Applicant's Exhibit 2 in every respect, as far as I can tell by a comparison of Applicant's Exhibit 2 with my recollection of the scratcher which we used in making the cylinders AAA-1 and AAA-2.

XQ.666: So Applicant's Exhibit 15 was not used in the making of the pattern Exhibit AAA-1 and AAA-2? A. That is correct.

XQ.667: Is there in evidence a pattern or half cylinder showing the pattern made by Applicant's Exhibit 15? A. No, there is not.

XQ.668: What was the diameter of the cylinder that is shown in AAA-1 and AAA-2?

A. As I remember it, it was  $9\frac{5}{8}$  inches. I would like to check that by measuring the half cylinder which is here before us. It is  $9\frac{7}{8}$  inches in diameter, internal diameter.

XQ.669:  $9\frac{7}{8}$ ? A. Yes, sir. [2642-270]

\* \* \*

XQ.786: You have indicated that you took no part in the selection of the equipment to be tested?

A. That is correct.

Mr. Lyon: You mean by that when it was tested in Wright's back yard?

The Witness: That is correct.

XQ.787: (By Mr. Scofield): Did you specify the length of the operating wires that should be used in these respective tests?

A. Which respective tests?

(Deposition of William A. Doble.)

XQ.788: The tests that were made on the machine here that you have photographs of here in the record.

A. I have two different sets of tests.

XQ.789: Let me first just identify the two different tests. Please identify the two different tests.

A. The tests made in Mr. Wright's back yard I did not have anything to do with the selection of anything, I merely observed operations. [2642-293]

\* \* \*

XQ.799: I put before you Petitioner's Exhibit HHH. A. Yes, sir.

XQ.800: To your knowledge was that scratcher altered in any way other than by welding down the seam where the two parts come together?

A. The ends of the wires, I believe, were 5 inches, and they were cut down to the length they are now in Petitioner's Exhibit HHH. Other than that, there was absolutely nothing done to the scratcher in any way that I know of.

XQ.801: That is, to your knowledge——

A. To my knowledge.

XQ.802: ——there was nothing done to the scratcher? A. That is correct.

XQ.803: Did anyone tell you that the scratcher had been altered in any way?

A. No, sir, they assured me it had not been.

XQ.804: Who assured you?

A. Mr. Solum, who I requested that he purchase a Weatherford scratcher in the open market, a 3½-



(Deposition of William A. Doble.)

inch Weatherford scratcher in the open market, and which he had [2642-296] some little trouble in purchasing, and finally produced the scratcher of Petitioner's Exhibit HHH. He had that scratcher which then was, you might say, a broken ring, he had it welded to place the scratcher in an operative condition. He cut the wires to I believe the same diameter as used in the other 3½ inch scratchers which we tested, and in absolutely no other way, as far as I know, was this exhibit altered, tampered with, changed, bent, or in any way mutilated or forced or bent, or anything else.

\* \* \*

XQ.805: (By Mr. Scofield): Did Mr. Solum do the cutting of the wires?           A. Yes, he did.

XQ.806: Did you see him cut them?

A. Yes, sir.

XQ.807: Were these wires in both rows supposed to be the same length?

A. Yes, from the coil, as I remember him cutting them. He put his scale on the center line [2642-297] of the coil outwardly, and then cut each one the same length or tried to cut each one the same length from the center of the coil out to the end of the wire.

XQ.808: I have a tape in my hand and am measuring from the center of the coil to the end of the wires in one row. I will call it the upper row as I hold it in my hand, so that this is the upper row in accordance with the photograph you have taken.

Mr. Lyon: Are you testifying?

(Deposition of William A. Doble.)

The Witness: I can't—

Mr. Scofield: Wait just a minute, I am going to ask you a question.

Mr. Lyon: Are you testifying? The witness has no opportunity to determine whether what you state is true or not.

XQ.809: (By Mr. Scofield): I find that the length of the wire is  $2\frac{1}{2}$  inches, and I would like to have you measure the length of that wire, and see if you make it the same length.

A. Is that the wire, Mr. Scofield, this wire

XQ.810: All of them in that row are supposed to be the same, are they not?

A. Yes, they are all supposed to be the same. Yes, I measure that one roughly  $2\frac{1}{2}$  inches. Do you want me to measure them all? [2642-298]

XQ.811: I don't care if you do. It does not matter. A. That, too—

XQ.812: I will take your word for it.

A. That one appears to be  $2\frac{1}{2}$ , yes, approximately that. Do you want me to measure the lower row?

XQ.813: I will turn the scratcher upside down so that the upper row—

A. I will turn it back again, and the lower row appears to be about  $2\frac{1}{4}$  inches, that is, the wire extending from—and here it is  $2\frac{3}{8}$ ; some are  $2\frac{1}{2}$  and some are  $2\frac{3}{8}$ ;  $2\frac{1}{4}$  and  $2\frac{3}{8}$ ;  $2\frac{1}{4}$  and [2642-299]  $2\frac{3}{8}$ .

\* \* \*

XQ.1037: No, that is not my question. My ques

(Deposition of William A. Doble.)

tion is: Did anyone tell you, that is, had anyone ever advised you what size hole, or the minimum size of hole that one of these scratchers must be capable of reversing in?      A. No, sir.

XQ.1038: They never have told you that?

A. No, sir.

XQ.1039: Did you ever discuss it with Solum?

A. No, no.

XQ.1040: Did you ever discuss it with Mr. Wright?      A. No.

XQ.1041: Do you know what the casing collar is on a pipe string, or do you know what the casing collars are on a pipe string?

A. As I understand it, that is where two joints of casing are connected together.

XQ.1042: Do you know whether these casing collars are of less diameter or of greater diameter than the casing itself?

A. As I recollect, they are usually of a larger diameter. [2642-344]

XQ.1043: Does that refresh your recollection as to any conversation you have ever had with anyone with respect to the reversibility of one of these collars?      A. No, sir, it does not.

XQ.1044: Did you ever attempt to reverse a scratcher of the type of Exhibit M within a hole that was substantially the size of the casing collar upon which that particular scratcher would be mounted?      A. No, sir.

XQ.1045: Did you ever attempt to reverse a wall cleaning guide within a hole of the size of a

(Deposition of William A. Doble.)

casing collar—— A. No, sir.

XQ.1046: ——upon which it is mounted?

A. No, sir.

XQ.1047: Did you ever attempt to reverse Nu-Coil within a hole of the size of the casing collar—— A. No, sir.

XQ.1048: ——upon which it is mounted?

A. Well, you mean that the scratchers are mounted on the casing, not on the collar?

XQ.1049: Yes, but the hole is substantially the size of the casing collar?

A. No, I have not made such a test. [2642-345]

\* \* \*

### Redirect Examination

By Mr. Lyon:

RDQ.1: Now, Mr. Doble, you have brought, subject to what you thought was a request, into the room a small sized aluminum cylinder, like the cylinder “24” of the exhibits that you have referred to, and the same is here at the present time, is it? A. Yes, it is.

RDQ.2: Will you produce it?

A. It is produced.

RDQ.3: I would like to have you look at the inside bore of that cylinder, that steel cadmium plate cylinder, and advise what you see on the inside of it?

Mr. Scofield: Was this produced at my request?

Mr. Lyon: That is what we understood.

Mr. Scofield: Would you identify what this is

(Deposition of William A. Doble.)

The Witness: Yes, I will be glad to, Mr. Scofield. This is the second cylinder we spoke about, the  $6\frac{7}{8}$  [2642-353] inches in diameter that was used in the test out at Mr. Wright's home in Los Angeles. I made a mistake in the record. I did refer to it as aluminum, but it is not aluminum, I found out when I carried it down here. I thought it was aluminum due to the coloring, but when I carried it down I determined it must be steel and not aluminum.

\* \* \*

RDQ.4: (By Mr. Lyon): I asked you to identify this cylinder.

A. This cylinder which I have before me bears a label [2642-354] entitled "Cylinder No. 2,  $6\frac{7}{8}$  internal diameter straight cylinder," and is illustrated in Petitioner's Exhibits KK, OO, XX, and is the cylinder which was used during the demonstration at Mr. Wright's home, and into and through the major length of which Petitioner's Exhibit KKK, Petitioner's Exhibit M, and Petitioner's Exhibit UU, and either Applicant's Exhibit 14 or one substantially identical, were reciprocated down and up and out of the cylinder.

RDQ.5: Will you look at the inside of that cylinder, and see what you find?

A. Do you want to identify it first?

Mr. Lyon: I will ask that this cylinder be marked as the Petitioner's exhibit next in order for identification.

(Deposition of William A. Doble.)

(The cylinder referred to was marked by the Notary Public as Petitioner's Exhibit LLL for identification, and made a part of this deposition.)

RDQ.6: (By Mr. Lyon): On the outside of that cylinder, Mr. Doble, there is a yellow or almost yellow crayon mark. What is that?

A. The yellow crayon mark forms No. 2, with the capital letter "B" slightly above and to the right of the figure "2." [2642-355]

RDQ.7: Do you know who put that mark on there? A. Yes, sir.

RDQ.8: Who? A. You did.

RDQ.9: When?

A. On September 27th, out at Mr. Wright's home, before the photographs were taken, in order that this particular cylinder might be identified in the photographs.

RDQ.10: Will you look at the inside of that cylinder and tell me what you see?

A. I am now looking into the bore of the cylinder Petitioner's Exhibit LLL, and I note a great many vertical lines scribed in the bore, and those lines are substantially parallel to the cylindrical axis of the bore, and up at the upper end of the bore and adjacent the end of the scratch marks there is clear evidence of sidewise movement of the wires of the scratchers which were reciprocated into and out of the bore of Petitioner's Exhibit LLL.

RDQ.11: How do the scratch marks in the in-

(Deposition of William A. Doble.)

terior of the bore compare with those placed on the interior of the bore during the testing at Mr. Wright's back yard September 27, 1952? [2642-356]

\* \* \*

The Witness: The lines which you have pointed out are those lines which were scribed by the scratchers which were operated in the bore during the tests in Mr. Wright's back yard.

RDQ.12: You have already testified as to what those tests were, haven't you? A. I have.

RDQ.13: Now, Mr. Doble, you were also asked to produce a scratcher that was used in the test shown in photographs, Exhibits AAA-1 and AAA-2 and BBB-1 and BBB-2.

A. The B's are the cylinders themselves.

RDQ.14: The B's are the cylinders themselves? That is what I thought. Have you that scratcher?

A. Yes, sir, I have that scratcher before me, and in order that it may be identified, at the time of the test I had the letter or the number "2" painted on [2642-357] the inside surface of the body portion of the scratcher with black ink—black paint, the same as used on the face of the half cylinders to record the scratch lines made by the wires of that particular scratcher.

RDQ.15: Was this particular scratcher, the one that you have identified there with the "2" inside of it, taken from the stock of B & W?

A. Yes, sir.

RDQ.16: Without alteration?

(Deposition of William A. Doble.)

A. Without alteration.

Mr. Scofield: Let me see it, please.

Mr. Lyon: I will offer the scratcher in evidence as Petitioner's Exhibit MMM.

(The scratcher referred to was marked by the Notary Public as Petitioner's Exhibit MMM, and made a part of this deposition.)

RDQ.17: (By Mr. Lyon): Mr. Doble, in Exhibit MMM I notice that there is no uniformity at which the wires extend outwardly from the body. Was that the condition of the scratcher when it was withdrawn from stock?

A. Yes, as far as I can tell now, that is the way it came from stock. I notice a few of the wires are slightly bent from the manner in which they are normally extended from the cylindrical surface of the scratcher. [2642-358]

RDQ.18: Now, Mr. Doble, you spoke on cross-examination of increment of rotation, and in any of the scratchers that you have tested or seen tested, is there any difference in principle of operation, or was the operation differing only in degree?

A. That is it.

Mr. Scofield: That is objected to——

The Witness: Correct, Mr. Lyon.

Mr. Scofield: ——as calling for a conclusion. Of course, the counsel is testifying.

Mr. Lyon: Which is correct, Mr. Doble? I asked you if it was this or that.

Mr. Scofield: And calling for a yes or no answer.



(Deposition of William A. Doble.)

The Witness: I will state this: That as far as I could determine, all of the scratchers which I have tested rotated in increments, and it was merely a matter of degree as to whether the increment would be larger or smaller. They all trace substantially the same paths through the cylinder. They all rotated, the increment we have referred to, at the reversal of the stroke. Certain of the scratchers rotated by a little larger increment than the others, otherwise they are the same.

RDQ.19: (By Mr. Lyon): Now, Mr. Doble, you were asked several times on cross-examination as to whether you [2642-359] had seen any of these scratchers operated in a regular hole; that is correct, is it not? A. Yes, sir.

RDQ.20: I hand you a photograph, and ask you if you can identify this? A. I can.

RDQ.21: What is this photograph?

A. The photograph which you have handed me is a photograph of a cylinder in which there was cast a cement-like surface, and the photograph bears the label "Cylinder No. 1, 9 $\frac{7}{8}$  i.d., with cement walls and irregular cavities in the side walls."

RDQ.22: Where did you see the cylinder?

A. I saw this cylinder on September 27th in the back yard of Mr. Wright's home in Los Angeles.

RDQ.23: Was it used for any purpose?

A. Yes, sir.

RDQ.24: What purpose?

A. We used it to test out the scratchers on, in a cylinder having a cement wall.

(Deposition of William A. Doble.)

Mr. Lyon: I will ask that the photograph be received in evidence as Petitioner's exhibit next in order, which is NNN.

(The photograph referred to was marked by the Notary Public as Petitioner's Exhibit NNN, [2642-360] and made a part of this deposition.)

RDQ.25: (By Mr. Lyon): You say that you observed the scratchers operated in the test machine in this cylinder of Exhibit NNN on September 27, 1952, Mr. Doble?           A. Yes, sir.

RDQ.26: What scratchers?

A. Scratchers—in fact, I think this scratcher is one that we operated in the cement cylinder, and this scratcher is identified by Applicant's Exhibit 15, and the cement cylinder is identified as Petitioner's Exhibit NN. I think you can still observe on the ends of the scratcher wires the cement dust which was deposited on those fingers during the test.

RDQ.27: Any one of these scratchers?

A. Let's see, I think there is a 5½-inch Nu-Coil type scratcher that was run, a 5½-inch scratcher of the Jones type was run, and a 5½-inch scratcher similar to Petitioner's Exhibit MMM were run through the cement cylinder of Petitioner's Exhibit NNN. [2642-361]

\* \* \*

The Witness: It was substantially the same. It was a little harder to determine some of the factors of rotation, but as far as I could see the tests run

(Deposition of William A. Doble.)

in the cement cylinder were comparable to the tests run in the steel cylinder.

RDQ.29: (By Mr. Lyon): I note on the inside of the cylinder of Exhibit NNN that the cylinder wall is not uniform, there is a large cavity shown. Did that affect the operation?

A. It did not appear to affect the tendency of the scratchers to rotate.

RDQ.30. Did the scratchers rotate in this cylinder?

A. Yes, they did, both at the upper and lower ends of the stroke.

RDQ.31: In these tests that were conducted in Mr. Wright's back yard, state whether or not it is a fact that I directed all operations, all sizes of scratchers, all sizes of cylinders, and all cylinders that were used? A. That is correct.

RDQ.32: You have tested, Mr. Doble, scratchers of the same construction, as brought out on cross-examination, the wires of which were of smaller gage and larger gage and otherwise precisely the same structures. What effect did the change of gage have in these tests? [2642-362]

\* \* \*

A. I have run Petitioner's Exhibits KKK and M in the same cylinder. The difference between the two exhibits resides, as far as I can tell, only in the gage of the wire used in these two exhibits. For example, Petitioner's Exhibit KKK has wires of .064 diameter and Exhibit M has wires of a larger diameter, which I believe is .072. Both of the

(Deposition of William A. Doble.)

scratchers were run in exactly the same manner, and the only difference that I could detect in the operation was that it took more force to operate the scratcher having the heavier wires than it did the scratcher with the lighter wires. Other than that, as far as I could see, the increment of rotation was the same, the character of the lines were the same, with the exception that the heavier wires scribed a heavier line on the inner surface of the cylinder.

RDQ.34: Mr. Doble, on cross-examination you were asked if you had seen a specification of scratcher sizes in a publication of B & W similar to those which [2642-363] you have referred to in Petitioner's Exhibit Z. I place before you Petitioner's Exhibit E, and I ask you if you have seen this B & W bulletin?           A. Yes.

RDQ.35: Is that the bulletin that you refer to when you said "Yes" to the question which I above referred to?           A. Yes, sir.

RDQ.36: I will ask you to compare the two tables of Exhibits Z and E.

A. I have made an examination of the tables appearing in Petitioner's Exhibits Z and E, and I find that the column entitled "API Csg. o. d.," the column of figures there, which represents the sizes of the scratchers, is exactly the same, is identical, in fact, in both of the exhibits. I also find that under the heading in the same table "Standard Outside Diameter," I find the same heading in each of these tables, and I find exact identity between the standard sizes as set forth in these two exhibits.

(Deposition of William A. Doble.)

I have checked the price list of the two exhibits and find the prices are identical, that is, the prices in each of these tables under the "List Price," is identical one with the other. I find in the Petitioner's Exhibit E several columns which are not included in Petitioner's Exhibit Z, [2642-364] those being "O. D. Coupling, W. C. Guide, Width, Number of Wires, Wire Gauge." Those headings were left out of the table listed in Petitioner's Exhibit Z. I also note under the table the following notation in each of these portions of the respective exhibits, namely: "Larger sizes on application. Wire length varied at no additional cost for any size casing or hole condition." I find that identical wording on both of the exhibits.

RDQ.37: What is the 5½-inch casing size scratcher outside diameter indicated in both Exhibits E and Z?      A. 10¼ inches.

RDQ.38: And how does that compare with Exhibits A, 2, MMM, and 15, Mr. Doble?

Mr. Scofield: Read the question.

(Question read by the reporter.)

The Witness: They are all the same, that is, the outside diameter of all of the scratchers which you have enumerated have a 10¼-inch diameter.

RDQ.39: (By Mr. Lyon): And they are all 5½-inch casing scratchers?      A. Yes, sir.

RDQ.40: Mr. Doble, I have placed the scratcher Exhibit HHH upon a ruler to determine its approximate [2642-365] outside diameter. Will you

(Deposition of William A. Doble.)

tell me what that approximate outside diameter is?

A. As best I can judge it appears to be  $7\frac{1}{2}$  inches.

RDQ.41: I am going to place Exhibit UU for identification, and I will offer UU in evidence at the present time, over Exhibit HHH. I am going to place Exhibit M on top of this stack, and I am going to place Exhibit 14 on top of that pile, and I am going to place Exhibit KKK on the top of that, and I am going to ask you to determine as near as possible by sight whether or not these scratchers are all of approximately the same external diameter? A. Yes, they appear to be.

RDQ.42: During the tests, Mr. Doble, with any of the scratchers you have made, did you determine whether or not there was any precise uniformity of length of the wires in any of these scratchers?

A. I would like to have your question read, Mr. Lyon, if I may.

(Question read by the reporter.)

The Witness: No, I have not. The scratchers are not, you might say, precision made instruments, and there is considerable variance in the wires, their angular relation to the body portion of the scratcher; [2642-366] such bends as are placed in the wires vary, and of the good many scratchers that I have seen in stock in the B & W warehouse in Long Beach I noticed there that it was general for one or more of the wires to vary slightly in angle or length with relation to another. They

(Deposition of William A. Doble.)

are not a precision manufactured article, and there is no need that they be. They work just as well, constructed in the manner they are constructed, as a practical operation. [2642-367]

\* \* \*

Direct Examination

By Mr. Lyon:

Q.1: You are the same William A. Doble who previously testified in this matter?

A. Yes, sir.

Q.2: I believe under my suggestion you have had certain devices made and certain tests made since you have last testified, is that correct, Mr. Doble? A. That is correct. [2642-377]

Q.3: I hand you a couple of devices and ask you what these are?

A. The first device which you have handed me is a tool, a hand-operated tool for winding spring coils.

Mr. Lyon: I will ask that this device be marked Petitioner's Exhibit 7G.

(The device referred to was marked by the reporter as Petitioner's Exhibit 7G for identification and made a part of this deposition.)

Q.4: (By Mr. Lyon): The second tool is what?

A. The second tool which you have handed me is a tool for forming an eye at the fastening end of a scratcher whisker spring coil.



(Deposition of William A. Doble.)

Mr. Lyon: I will ask that this second wire eye forming tool be marked Petitioner's Exhibit 7H.

(The device referred to was marked by the reporter as Petitioner's Exhibit 7H and made a part of this deposition.)

Q.5: (By Mr. Lyon): Where did these tools come from, 7G and 7H, Mr. Doble?

A. I had an Adams-Campbell man—I had the Adams-Campbell Company make the tools, Petitioner's Exhibits 7G and 7H. I went down to Adams-Campbell on March 4 of this year and instructed Mr. Stewart Kipper [2642-378] to make the two hand tools.

Q.6: From what did you instruct Mr. Kipper to make these tools?

A. From a description which you gave me of the tools and from a sketch which you had made of the tools, and I mean by you, Mr. Lewis E. Lyon.

Q.7: After these tools were made, was anything done with the tools?

A. Yes, after the tools were made, Mr. Lewis Lyon and I operated the tools in the plant of Adams-Campbell to there form spring wires similar to the spring wires used in the Weatherford scratcher.

Q.8: Did I give you any instruction, Mr. Doble, with respect to the manufacture of any scratchers at or about that time?

A. Yes, a few days after that time you instructed me to have Adams-Campbell make a



(Deposition of William A. Doble.)

Weatherford type of scratcher having a 5½-inch—that is, for a 5½-inch casing, in which the spring coils, the wires of the scratcher, had a sidewise—that is, the axis of the coils had a sidewise inclination to a radius—to the several radii of the scratcher and in which the outwardly or sidewise inclined free ends of the wire were substantially tangent to the body of the scratcher.

Mr. Scofield: That was in March, [2642-379] 1953?

The Witness: That was March 12, 1953.

Q.9: (By Mr. Lyon): Was Adams-Campbell requested to use any particular tool in making this 5½-inch Acme type scratcher that I requested you to make on March 12, 1953?

A. Yes, they were instructed to use the two hand tools, Petitioner's Exhibits 7G and 7H, in forming the coils and fastening the ends of the spring wires for this particular scratcher and were also instructed to make that scratcher in accordance with the advertisement of the Acme scratcher which we had used in the operation of some previous samples.

Q.10: Was any other change made in this new Acme type scratcher than the previous Acme type scratchers which have been here introduced in evidence?

A. No, sir.

Q.11: That is, the only change was the change in direction of inclination of the coils?

A. That is correct, as closely as we could duplicate it.

(Deposition of William A. Doble.)

Q.12: I hand you a scratcher and ask you if you can identify that.

A. Yes, this is the scratcher which resulted from my instruction to Mr. Stewart Kipper of Adams-Campbell to make an Acme type scratcher similar to the [2642-380] Acme advertisement, in which the axis of the coils extended at a sidewise inclination from the radius of the scratcher body.

Q.13: I notice that you have inserted something through one of the coils. What is that, Mr. Doble; what have you done?

A. I have placed about a four-inch piece of steel rod, which closely fits the inside bore or inside opening of the spring portion of the wire and have inserted that rod through the spring and have observed the inclination, sidewise inclination of that rod with relation to the center or the radii of the scratcher body.

Q.14: In what direction do the wires, the ends of the wires which extend outwardly from the collar of this Acme type scratcher extend, Mr. Doble?

A. Substantially tangential to the body portion, the outside body portion of the scratcher.

Q.15: You have stated, I believe, that this scratcher which I will now ask be marked 7I, was made from an advertisement of July 7, 1941. Is that your testimony, Mr. Doble?

A. Yes, sir, that is correct.

(The Acme scratcher referred to was marked by the notary public as Petitioner's Exhibit

Deposition of William A. Doble.)

71, and made a part of this [2642-381] deposition.)

Q.16: (By Mr. Lyon): What do you mean by that?

A. Well, I instructed Mr. Stewart Kipper to in all respects duplicate the teaching of the advertisement of the Acme wall scratcher occurring in—I forget—the Petroleum——

Mr. Scofield: Oil Weekly.

The Witness: ——Oil Weekly of June 7, was it?

Q.17: (By Mr. Lyon): July 7.

A. What year? I don't remember.

Q.18: 1941. A. 1941.

Mr. Lyon: That is in evidence as the Petitioner's Exhibit Z and the enlargement is Exhibit Z-1.

Q.19: After this scratcher, Exhibit 7I, was made, what was done with it, if anything?

A. Nothing particularly was done with it except it was observed and checked with the advertisement, and I believe it has been in your office since that time.

Q.20: I hand you Petitioner's Exhibit AA, and I will ask you if this is the Acme scratcher that you testified to that had been previously made, and which was like Exhibit 7I, except for the particular which you pointed out; is that correct? [2642-382]

A. That is correct.

Q.21: After March 12, 1953, did I direct you to make any further tests of any kind, Mr. Doble?

A. Well, yes, you did.

(Deposition of William A. Doble.)

Q.22: Or determinations?

A. I believe it was on March 4 you instructed me to have a machine made for the purpose of testing to determine whether or not a Weatherford scratcher during its passage through a cylinder would cause a simulated casing to rotate during the passage of the structure through the tube. I talked the matter over with Mr. Kenneth Wright, and he arranged to have a testing machine built, and that machine was built by the L & L Machine Company——

Q.23: L & S Machine Company, is it not?

A. L & S Machine Company, whose plant is located at 1937 Obispo Avenue, in Long Beach.

Mr. Lyon: Just before we get into that I will offer in evidence at this time the wire coil winding tool heretofore identified as Exhibit 7G for identification, as Exhibit 7G, and I will [2642-383] offer——

\* \* \*

Mr. Lyon: I will offer in evidence at this time the wire eye-forming tool heretofore identified as Exhibit 7H, as Exhibit 7H.

\* \* \*

Mr. Lyon: I will offer in evidence at this time the 5½-inch Acme scratcher heretofore identified as Exhibit 7I, as Exhibit 7I.

\* \* \*

Q.24: (By Mr. Lyon): Going back to these rotation tests, Mr. Doble, you say you built a testing

(Deposition of William A. Doble.)

machine—— A. No.

Q.25: ——or had a testing machine built; is that correct?

A. That is correct, by the L & S Machine Company in Long Beach. What about that pin sticking through the coil? Are you going to make that a part of the exhibit?

Q.26: You are interested in the pin?

A. No, I just want to know.

Mr. Lyon: I will ask that the drill rod which Mr. Doble used in his demonstration, which is now projecting through one of the coils in Exhibit 7I, be marked and received in evidence as Exhibit 7J. [2642-384]

\* \* \*

Q.27: (By Mr. Lyon): I hand you a photograph, Mr. Doble, and ask you if you can tell me what that is?

A. The photograph which you have handed me, Mr. Lyon, is a side elevation of the testing machine which Mr. Wright had constructed at the L & S Machine Company plant in Long Beach.

Mr. Lyon: I will ask that the photograph which has just been identified by the witness be marked as Petitioner's Exhibit 7K.

(The photograph referred to was marked by the reporter as Petitioner's Exhibit 7K for identification and made a part of this deposition.)

Q.28: (By Mr. Lyon): I hand you a second

(Deposition of William A. Doble.)

photograph, Mr. Doble, which I will ask be marked Exhibit 7L, and ask you if you can tell me what that photograph is.

A. The photograph which you have handed me and asked to be marked as Petitioner's Exhibit 7L is a solid steel rod to give it weight which we used to simulate a well casing and this photograph also includes a ball bearing thrust mounting which has been removed [2642-385] from the cylinder or casing and placed upon the top of the casing so that it could be readily observed. The ball bearing mounting is provided to permit the casing to freely rotate relative to its supporting line.

(The photograph referred to was marked by the reporter as Petitioner's Exhibit 7L for identification, and made a part of this deposition.)

Q.29: (By Mr. Lyon): I hand you a photograph, Mr. Doble, which I will ask to be marked Petitioner's Exhibit 7M and ask you what this is a photograph of.

(The photograph referred to was marked by the reporter as Petitioner's Exhibit 7M for identification, and made a part of this deposition.)

The Witness: The photograph which you have handed to me and is marked Petitioner's Exhibit 7M is a side view of the cylinder which we used to simulate the casing and is similar to the exhibit,

(Deposition of William A. Doble.)

Petitioner's Exhibit 7L, with the exception that the ball bearing supporting means is mounted within the casing and the scratcher confining bands have not been placed upon the casing as they appear in Petitioner's Exhibit 7L.

Q.30: (By Mr. Lyon): I hand you a photograph, Mr. Doble, which I will ask be marked for identification as [2642-386] Petitioner's Exhibit 7N and ask you if you can tell me what this photograph shows?

(The photograph referred to was marked by the reporter as Petitioner's Exhibit 7N for identification, and made a part of this deposition.)

The Witness: The photograph, Petitioner's Exhibit 7N, which you have handed to me is a side elevation of the winding drum around which the four-inch spring steel band is wrapped.

Mr. Scofield: Did you say winding drum?

The Witness: Yes, winding drum. It also shows a pin extending through the side flanges of the drum to prevent the band from unwinding.

Q.31: (By Mr. Lyon): I hand you a photograph, Mr. Doble, which I will ask to be marked Petitioner's Exhibit 7-O for identification and ask you to tell me what this photograph is a picture of.

(The photograph referred to was marked by the reporter as Petitioner's Exhibit 7-O for identification, and made a part of this deposition.)

(Deposition of William A. Doble.)

The Witness: The photograph which you have handed me, Petitioner's Exhibit 7-O, is a view similar to Petitioner's Exhibit 7M upon which three Weatherford [2642-387] type scratchers have been mounted. Those scratchers were identified with the letters "F," "G" and "H."

Q.32: (By Mr. Lyon): While we are on Exhibit 7-O, will you tell me whether or not the scratchers were mounted all with the wires extending in the same direction?      A. They are.

Q.33: There is no reversal of the position of the scratchers so far as one with the other?

A. No, sir, there is not.

Q.34: I hand you another photograph, Mr. Doble, which I will ask to be marked Petitioner's Exhibit 7P for identification, and ask you if you can tell me what this is a photograph of?

(The photograph referred to was marked by the reporter as Petitioner's Exhibit 7P for identification, and made a part of this deposition.)

The Witness: The photograph which you have handed me and which has been identified as Petitioner's Exhibit 7P illustrates a three-quarter front view of the testing machine with the winding drum assembled on the hoisting motor, the band extending from the hoisting drum over the pulley on the swinging arm and the band then extending down, and attached to the lower end of the band may be seen the casing assembly as shown in Petitioner's



(Deposition of William A. Doble.)

Exhibit [2642-388] 7-O. The assembly of the three scratchers on the casing is the same as shown in Petitioner's Exhibit 7-O and the bottom of the simulated casing is resting on the floor.

Mr. Lyon: I hand you a further photograph, Mr. Doble, which I have marked for identification Exhibit 7Q and will ask you if you can tell me what this is a photograph of.

(The photograph referred to was marked by the reporter as Petitioner's Exhibit 7Q for identification, and made a part of this deposition.)

The Witness: Petitioner's Exhibit 7Q illustrates the testing machine, and discloses the hoisting arm which has been numbered "8," and the number appearing just below its pivot point on the cylinder which simulates a well bore.

Mr. Scofield: It has been numbered what?

The Witness: "8." If you will notice just below its pivot point on that arm——

Mr. Scofield: Oh, I see it.

The Witness: ——there is a number "8."

Mr. Scofield: I see it.

The Witness: And the scratchers assembled on the simulated casing appeared just as they are ready to [2642-389] enter the upper end of the cylinder.

Q.35: (By Mr. Lyon): I hand you another photograph, Mr. Doble, which I will mark 7R for

(Deposition of William A. Doble.)

identification, and ask you if you can tell me what that is a photograph of.

(The photograph referred to was marked by the Notary Public as Petitioner's Exhibit 7R for identification, and made a part of this deposition.)

The Witness: Petitioner's Exhibit 7R is similar to Petitioner's Exhibit 7Q, excepting that the view has been taken from about three-quarters rear view, and in this Exhibit 7R the simulated casing carrying the three scratchers has been progressed through the cylinder which simulated a well bore.

Q.36: (By Mr. Lyon): I hand you a further photograph, Mr. Doble, which I have marked 7S for identification, and ask you if you can tell me what this is; at the same time I will hand you a second photograph which I have marked for identification as Exhibit 7T. Maybe you can explain these two together.

(The photographs referred to were marked by the Notary Public as Petitioner's Exhibits 7S and 7T for identification, respectively, and made a part of this deposition.)

The Witness: Petitioner's Exhibit 7S [2642-390] is a photograph of the lower end of the cylinder, and shows me checking, by means of a scale and a center head, to determine whether there has been rotation of the simulated casing during its passage

(Deposition of William A. Doble.)

through the large cylinder which simulated the well bore.

Petitioner's Exhibit 7T is a view of the top end of the test machine, and shows me in position in which I was checking the alignment of certain scribed lines on the simulated casing, with corresponding scribed lines on the bottom and outer surface of the large cylinder which simulated the well bore. It can be observed from this photograph the scribed lines on the upper end of the casing, and also the scribed line on the outside of the large cylinder. In this manner I checked to determine whether there was or was not rotation of the simulated casing during its passage through the long cylinder, and I found absolutely no rotation of the simulated casing during its passage through the large cylinder.

Q.37: (By Mr. Lyon): I will hand you another photograph, Mr. Doble, which I have marked 7U for identification, and I will ask you if you can tell me what this is a picture of?

(The photograph referred to was marked by the Notary Public as Petitioner's [2642-391] Exhibit 7U for identification, and made a part of this deposition.)

The Witness: Petitioner's Exhibit 7U is a photograph of the long cylinder which has been removed from the testing machine, and a cut taken longitudinally through one of the side walls of the cylinder. I might say that a similar cut was taken on the

(Deposition of William A. Doble.)

back which does not show in this photograph, although the back cut was not cut all the way through the cylinder.

Q.38: (By Mr. Lyon): I hand you a further photograph that I will mark 7V for identification, which I will ask if you can identify, and tell me what this is a picture of?

(The photograph referred to was marked by the Notary Public as Petitioner's Exhibit 7V for identification, and made a part of this deposition.)

The Witness: Petitioner's Exhibit 7V is a photograph showing the cylinder of Petitioner's Exhibit 7U spread apart so that its two halves which are identified as "1B" and "1A," so as to expose the interior surface of the large cylinder which has been blackened, and on the inner surface there is clearly scribed the lines made by the three ends of the wires of the three Weatherford scratchers as they passed through this large [2642-392] cylinder.

Q.39: (By Mr. Lyon): On this series of photographs, Exhibits 7K to 7V, they were taken by whom and under whose supervision, Mr. Doble?

A. All of the exhibits, photographs from 7K to 7V were taken by Mr. Lewis Lyon, Jr., who is known in the trade as Beans Lyon, and were taken under my direction in my presence at the L & S Machine Company plant at 1937 Obispo Avenue in Long Beach.

Q.40: When?

A. On April 3, 1953.

(Deposition of William A. Doble.)

Q.41: Now, these photographs, the machines and parts shown in these photographs I note carry on the respective parts identifying letters and numbers. Using those identifying letters and numbers where possible, will you describe for me this machine, in the first instance describing each of those parts, the manner of its assembly and the manner of its operation.

A. I will refer first to Petitioner's Exhibit 7L in this group of exhibits. In this exhibit, there is depicted a cylinder which I have given the identifying letter capital "A" to. This cylinder is a solid rod so as to give it sufficient weight to carry the scratchers later mounted upon it through the bore on the last cylinder. This cylinder "A" simulates a well [2642-393] casing. It is 5½ inches in diameter, it is 16¾ inches long and is provided with four scratcher confining bands, "B," "C," "D," and "E." All of those I made reference to will be capitals unless I otherwise tell you.

The stock bands or parts "B," "C," "D," and "E" are retained in position each by a plurality of Allen type setscrews as can clearly be seen in the photograph. On top of the simulated casing there is mounted the thrust and radial bearing which is used to eliminate any outside tendency to cause rotation of the casing "A" during its passage through the large cylinder.

Q.42: Now, stop right there. Does that bearing mounting mean that what you have called the casing

(Deposition of William A. Doble.)

or solid rod "A" is free to rotate at all times on the bearing?

Mr. Scofield: That is objected to as leading.

The Witness: Yes, that is true and it could be readily spun, which I did prior to running the test to see that the bearing was properly adjusted so that any tendency to locate the connecting eye in the supporting bolt during operation would not transmit rotation to the casing "A."

In Petitioner's Exhibit 7M the bearing——

Mr. Scofield: M or N? [2642-394]

The Witness: M—the bearing is mounted within casing "A" and shows the projecting end of the supporting belt projecting above the casing.

I will now refer to Petitioner's Exhibit 7K. In Petitioner's Exhibit 7K there is a large tube or cylinder which I have——

Mr. Lyon: It is marked "6" on 7P. You had better take this pen——

The Witness: No, it is marked on Petitioner's Exhibit 7K and in this case there is a numeral "1-A" down at about the center portion of the cylinder.

Q.43: (By Mr. Lyon): Well, on 7K it might be well to take the pen and put the numbers on 7K, using the pen, putting the numbers and a little line, if you will, describing these parts, Mr. Doble, because they unfortunately do not appear fully to my feeble eye on the photographs. I can see it now. There it is, right there.

A. May I have the exhibits.

Deposition of William A. Doble.)

Mr. Lyon: I will hand Mr. Scofield a set of the exhibits, photographs Exhibit 7A to 7V.

The Witness: I have placed on 7A the numeral "1," followed by a small capital "A" and a lead line to the large cylinder. I will also put a circle around the numeral "1" with the letter capital "A" on the center of [2642-395] the cylinder, which number and letter were placed on the cylinder before the photograph was taken.

The cylinder is mounted in a frame which comprises a collar "2" and I am placing the numeral "2" opposite the collar and extending a lead line to the collar. However, it will be observed that approximately in the center of the collar there is the numeral "2," although it is not very distinct. The collar of the frame is supported on three legs which we will number "3," "4," and "5." This tripod frame arrangement retains the cylinder in its upright direction and its lower end spaced sufficiently from the floor level so that the scratcher assembly on the simulated casing may pass through the cylinder and, as it may be observed in Petitioner's Exhibit 7K, the scratcher assembly on the casing, on the simulated casing, is positioned to the left-hand side of the tube and shows that it would clear the lower end of the cylinder when it passed therethrough. To the upper end of the cylinder is mounted a collar "6" and I am placing upon Petitioner's Exhibit 7K the numeral "6" with a lead line to the collar. To the right-hand side of the collar——

(Deposition of William A. Doble.)

Q.44: (By Mr. Lyon): You had better watch Exhibit 7T, Mr. Doble, and be sure you are following the same numbers which are very visible on Exhibit 7T. [2642-396]

A. Yes. In fact, you can just barely distinguish the numeral "6" on the center of the collar in Petitioner's Exhibit 7K and I will put a circle around the numeral "6." Now, if we will turn to Petitioner's Exhibit 7T, not only is the numeral "6" clearly visible on the center of the collar, but the figure "7" is also clearly visible on a pair of lugs which extend outwardly from the collar, and in Petitioner's Exhibit 7T I will put a circle around the "6" on the collar and the "7" on the lug.

To the outer end of the lug "7" there is pivotally mounted a swinging arm "8." I will circle the "8" with an ink line there, and will also place the numeral "8" to the side of the arm with a lead line to the arm, that is, I am placing the figure "8" on Petitioner's Exhibit 7K.

Mounted on the lower end of the ascending arm "8" is a motor-driven hoist, which has the numeral "10." However, I will place the numeral "10" to the side of the motor hoisting unit, with a lead line to the hoisting unit.

On the upper end of the hoisting arm "8" is a pulley, which I will designate with the numeral "9," with a lead line extending to the pulley. I am afraid that there might be some confusion with the number "9." [2642-397]

Q.45: That is "9." You just rotated it around.



(Deposition of William A. Doble.)

A. Mounted on the hoisting motor unit "10" is a hoisting drum identified by the numeral "11" with a small "d," and I have placed the numeral "11" with a small "d" to the side of the hoisting drum, with a lead line extending to the drum.

Extending from the drum "11d" is a spring steel band "12." The band extends up and round pulley "9," and down to a latch "13," which latch latches onto the eye, as is most clearly observed in Petitioner's Exhibit 7L. I will give the eye a number, eye "14."

Mr. Scofield: Is the latch you are referring to that hook?

The Witness: Yes, sir.

Mr. Scofield: What number was that given?

The Witness: "13." The eye is "14." I am not marking the number "14" on the eye in Petitioner's Exhibit 7K, because it does not appear clearly in that photograph, but have marked it on Petitioner's Exhibit 7L, and I will also mark it on Petitioner's Exhibit 7M.

The eye "14" is formed in the upper end of the supporting bolt "15," which I am identifying on Petitioner's Exhibits 7K, 7L, and 7-O.

Q.46: (By Mr. Lyon): That is which, "15"?

A. "15" is the bolt, the supporting bolt on which the ball bearing is mounted.

Now, I will refer to Petitioner's Exhibit 7L, and will designate the ball bearing with a numeral "16," with a lead line extending to the bearing. The bearing is disassembled, partially disassembled,

(Deposition of William A. Doble.)

as it appears in Petitioner's Exhibit 7L. It includes a ball bearing unit, upper and lower thrust rings all of which are mounted on the supporting bolt. I will again point out that the bolt with its bearing are mounted in the casing "A," as shown in Petitioner's Exhibit 7L, and that, as may be observed in this Petitioner's Exhibit 7L, there are a plurality of stop rings "B," "C," "D" and "E," all of which are capital letters.

Now, I will refer to Petitioner's Exhibit 7-O, and will point out that in this exhibit there is mounted on the casing "A" three Weatherford 5½-inch standard scratchers which have been identified by the letters "F," "G" and "H," and I will call attention to the space between the upper edge of each of the scratchers, that is, the upper edge of the body of each of the scratchers with relation to its adjacent stop ring. For example, the scratcher "F" is positioned by the stop rings "B" and "C," leaving a space of about an inch and a half between the upper edge of the scratcher [2642-399] "F" and the lower edge of the stop ring "B." The cylinder which represents the casing is indicated by the capital letter "A," which can be seen between the letters "D" and "F." Likewise, there is space between the upper edge of the Weatherford scratcher "G" and its related upper stop ring "C," and in that space may be observed the "A," which was placed upon the casing, and in the same way the space between the upper edge of the Weatherford scratcher "H" and its stop ring "D" can

(Deposition of William A. Doble.)

also be observed. The three scratchers were freely rotatable upon the casing "A" and could shift longitudinally freely between their respective stop collars.

Q.47: I believe you have now described the mechanical assembly of these parts, and now will you describe the operation which was performed on the scratchers in this machine and in this assembly which resulted, if it did, in the formation of the tracing as shown in the cylinder Exhibit 7V, Mr. Doble.

\* \* \*

The Witness: I will first refer to Exhibit 7K, and also to Petitioner's Exhibit 7P. In each of these two exhibits the casing with the scratchers mounted thereon has been connected to the spring band by the connecting mechanism which I have previously stated. [2642-400] From this point the hoisting mechanism was put in operation, and the assembly of the scratchers was hoisted until it was about ready to enter the upper end of the large cylinder "6."

From this point——

Q.48: (By Mr. Lyon): That is shown in Exhibit 7Q, is it?

A. That is shown in Petitioner's Exhibit 7Q. At this point the hoisting mechanism was reversed, and the assembly was lowered until it entered, fully entered the internal bore of the large cylinder "1."

Q.49: That position is shown in what exhibit, if any?

(Deposition of William A. Doble.)

A. That position is shown in Petitioner's Exhibit 7T. Also shown in this petitioner's Exhibit 7T is the scribed lines on the outside and upper end of the large cylinder "1," and also the scribed line on the upper end surface of the casing "A."

The exhibit shows me aligning or checking the alignment of the scratcher assembly with one of the scribed lines on the upper end of the large cylinder "1-A." From this position the power was applied to the hoisting mechanism to release the band. The scratcher assembly progressed, that is, the assembly of three scratchers progressed until the lower end of the [2642-401] cylinder was in substantially the same plane as the lower end of the cylinder "1-A," and now I will refer to Petitioner's Exhibit 7S where it will be noted that I am checking the position of the scribed line in this case on the lower end of the casing "A" with the same scribed line on the outside periphery and bottom edge of the large cylinder "1-A," and I find the lines correspond exactly with the same positioning as they did at the top of the cylinder.

Q.50: Indicating what, if anything?

A. Indicating that there was no rotation of the simulated casing within the simulated well bore.

From that point the hoisting mechanism was operated to lower the scratcher assembly to the position it appears in Petitioner's Exhibit 7R, where it will be noted that the scratcher assembly is directly below the large cylinder "1-A," and its lower end is now resting upon the floor.

(Deposition of William A. Doble.)

Q.51: All right, was anything else done?

A. The mechanism was disassembled, taking the cylinder from its supporting frame and upper flange. It was placed in a shaper, and a groove was shaped down one side of the cylinder "1-A" until it almost extended through the side wall of the cylinder. The cylinder was then rotated in the machine 180 degrees, and a similar [2642-402] cut was taken along the longitudinal surface of the cylinder, and this cut was progressed until the cut passed completely through the cylinder wall, and that condition is shown in Petitioner's Exhibit 7-U. The cylinder was then spread open and the lines traced by the free ends of the wires of the three scratchers were traced on the inside of the cylinder "1-A," the inside surface of the cylinder having been blackened previously for that purpose, and each half of the cylinder was given the designation "1-B" and "1-A."

Q.52: As shown in what exhibit?

A. As shown in Petitioner's Exhibit 7V.

Also, Exhibit 7V clearly shows that not only did the simulated casing in rotation, but neither did any one of the three Weatherford scratchers mounted on the simulated well casing rotate during its passage through the well cylinder "1-A."

\* \* \*

The Witness: In my opinion, it merely proves that there is no rotation transmitted from the

(Deposition of William A. Doble.)

scratchers to the simulated casing during the passage through a simulated well bore. [2642-403]

Mr. Scofield: Did you give a number to that top pulley?

The Witness: "9," No. "9," Mr. Scofield.

Q.54: (By Mr. Lyon): Mr. Doble, I will hand you a photograph or a photostat——

The Witness: Can we take time out for second?

Mr. Lyon: Surely, if you would like time out.

The Witness: I would, please.

(A short recess was here taken.)

Q.55: (By Mr. Lyon): The scratchers, Mr. Doble, as shown in Exhibit 7-O which are marked "F," "G," and "H," do you know where those scratchers came from? A. No, I don't.

Q.56: They were not scratchers specifically manufactured for this test? A. No, sir.

\* \* \*

Q.57: (By Mr. Lyon): You have testified that they were Weatherford scratchers?

A. Yes, sir.

Q.58: How did you ascertain that fact?

A. From their appearance. They were the same as all other Weatherford scratchers which I had seen [2642-404] of this same type and I recognized the characteristics of their manufacture and was advised that they were standard Weatherford scratchers which had not been altered.

Q.59: I hand you a photograph or a photostat

(Deposition of William A. Doble.)

which I will mark Exhibit 7W, and ask you if you can tell me what this is of.

(The document referred to was marked by the reporter as Petitioner's Exhibit 7W for identification, and made a part of this deposition.)

The Witness: You have handed me a photograph——

Mr. Scofield: A photograph or a photostat?

The Witness: A photostat, which includes well casing having spaced rings welded thereon and mounted between the rings, spacing rings for a B & W wall cleaning guide, and I believe that it is one of the photographs from the Jones & Berdine report.

Q.60: (By Mr. Lyon): I will ask you, Mr. Doble, to measure on the bottom of the photostat the diameter of the casing and place that on the photograph, at the bottom of the photograph, as to what the indicated diameter of the casing is at that point.

A. I am measuring the bottom end of the casing and I find it to be 3-9/16ths inches and I [2642-405] will place lines extending from the edges of the casing as it appears in the photograph and will extend the dimension line with arrows between the two lines previously made and place the figure "13-9/16"——

Q.61: It is 3-9/16ths, isn't it?

A. Excuse me, "3-1/16th," I will cross out the "13" and make it "3-9/16ths."



(Deposition of William A. Doble.)

Q.62: Now, Mr. Doble, I will ask you to measure the indicated diameter of the casing immediately below the lower welded ring and will you mark that on the photograph?

A. I have made the measurement, Mr. Lyon, and find it to be  $31\frac{1}{2}$  inches and I will place that on Petitioner's Exhibit 7W.

Q.63: Now, I want to ask you to measure the greatest exterior diameter of the scratcher to the outer-most wire as shown in Exhibit 7W and indicate that on the photograph.

A. I find by measuring the most outwardly extending wire on the left-hand side of the photograph and the most outwardly extending wire on the right-hand side of the photograph—and I am making dash lines from the wires which I have measured—and will put a dimension “7-5/16ths” between the dash lines.

Q.64: 7 and how much? [2642-406]

A. 5/16ths.

Q.65: Mr. Doble, I hand you a second photographic enlargement, which I mark “7X,” and ask you to tell me what that is a photograph of and measure the casing diameter at the center section of Exhibit 7W and indicate on the photograph 7W the diameter at the said central portions as you have measured it.

(The photograph referred to was marked by the reporter as Petitioner's Exhibit 7X for identification, and made a part of this deposition.)



(Deposition of William A. Doble.)

The Witness: The photostat which you have handed me, Petitioner's Exhibit 7X illustrates a well casing upon which has been mounted a Weatherford type of spring centralizer and appears to be taken from the Jones & Berdine report, and measuring the central portion of the casing, I find it to be three—well, it is hard to get it exactly— $3\frac{1}{2}$  inches, and I am placing dimension line " $3\frac{1}{2}$ " here, and  $3\frac{1}{2}$  may be a little large and  $3\text{-}7/16$ ths a little small. It is sort of halfway in between, but I will say  $3\frac{1}{2}$  inches across the casing at the point where I have measured it.

Q.66: (By Mr. Lyon): Now, take it at that point and measure the greatest diameter of the spring steel blades, centralizing blades. [2642-407]

A. In measuring across the outwardly bowed springs of the spring centralizer, I find it to be  $7\frac{3}{4}$  inches and I will mark the point which I have taken and I have placed the dimension " $7\frac{3}{4}$ " as the outside diameter of the springs of the centralizer.

Q.67: I will hand you, Mr. Doble, the Jones & Berdine report, which is Petitioner's Exhibit L, and ask you to compare Exhibits 7W and 7X with Figures 26 and 23 of the Jones & Berdine report and will ask you to read into the record at the time of the comparison a description of the photographs of the Jones & Berdine report.

A. I have now before me Petitioner's Exhibit L, a copy of the Jones & Berdine report, and I have turned to Figure 23, which bears the title "Spiral Spring Well Bore Cleaner and Casing Centralizer."

(Deposition of William A. Doble.)

Mr. Scofield: Fig. 23?

The Witness: Figure 23, "Outside Diameter of Centralizer Slightly Greater Than Inside Diameter of Test Well," and will compare Figure 23 with Petitioner's Exhibit 7X and would say that as far as the device as shown in the photograph, Petitioner's Exhibit 7X, it is identical to Figure 3—

Q.68: (By Mr. Lyon): Figure 23?

A. Figure 23, excepting that in the [2642-408] photostat the figure has been reversed so that the spiral of the spring members appears to have a right-hand spiral rotation in Exhibit 7X, whereas in Figure 23 they appear to have a left-hand rotation.

Q.69: Now, make the same comparison of 7W with Figure 26 of the Jones & Berdine report.

A. I have now before me Figure 26 of the Jones & Berdine report and Petitioner's Exhibit 7W.

Q.70: What does Figure 26 say below it?

A. Figure 26 states below as follows: "Wire wall scratcher with wires bent spirally. Outside diameter of scratcher slightly greater than inside diameter of test well," and I am comparing Petitioner's Exhibit 7W with Figure 26 and find they are identical excepting for size and the reversal of the direction of the wires due to the photostating process.

Q.71: Now, in each of Exhibits 7X and 7W you have indicated that the casing was approximately 3½ inches in diameter? A. Yes, sir.

(Deposition of William A. Doble.)

Q.72: And in 7W you have indicated that the outside diameter of the scratcher is  $7\text{-}5/16$ ths?

A. Yes, sir.

Q.73: And in Exhibit 7X you have indicated that the outside diameter of the centralizer bows is  $7\frac{3}{4}$ ? [2642-409]

A. Yes, sir.

Q.74: What would you say with reference to the notation made by the author that in each of these cases the diameter of the device is slightly greater than the inside diameter of the bag?

\* \* \*

The Witness: "Slightly greater than" left considerable leeway, in this case over—about a quarter of an inch between these two instrumentalities. We notice that the centralizer has about  $3/16$ ths greater diameter than the scratcher, showing the wide range of dimension contained within the notation "slightly greater than the inside diameter of the test well."

Mr. Scofield: Read that answer.

(The reporter read the answer.)

The Witness: I will have to correct that, my arithmetic was wrong.  $7/16$ ths it should be instead of  $3/16$ ths. There is almost a half an inch difference in the diameter.

Q.75: (By Mr. Lyon): One is  $12/16$ ths against  $5/16$ ths? A. That is right.

Q.76: Which leaves a difference of  $7/16$ ths?

A. That is correct, so "slightly" in Mr. Jones' report gives quite a leeway as to the [2641-410] in-

(Deposition of William A. Doble.)

crease in diameter over the diameter of the te  
bore.

Mr. Lyon: I will offer in evidence at this time the two photographs Petitioner's Exhibits 7W and 7X for the purpose of illustrating the testimony of the witness, and for the comparison which he has made.

\* \* \*

Q.77: Now, Mr. Doble, I believe at my request you also made some further tests in another type of machine. What were those tests?

A. Those tests were performed on wall cleaning guides having different lengths of wires to determine their operating characteristics in a cylinder which approximated the inside of a well [2642-411] bore or approximated the well bore, and also on test on a close tolerance Weatherford scratcher.

Q.78: Were photographs taken of those tests?

A. Yes, sir.

Q.79: When were they taken?

A. They were taken on May 27, 1953, at the L & S Machine Company plant, at 1937 Obispo Avenue, Long Beach, and they were taken by Mr. Lewis Lyon, Jr., known to the photography trade as "Beans" Lyon.

Q.80: I hand you a photograph and ask you if this is one of the photographs that were taken at that time and place? A. Yes, sir, it is.

Mr. Lyon: Let us have this marked as Petitioner's Exhibit 7Y.

(Deposition of William A. Doble.)

(The photograph referred to was marked by the Notary Public as Petitioner's Exhibit 7Y for identification, and made a part of this deposition.)

Q.81: (By Mr. Lyon): Of what is this a photograph?

A. Petitioner's Exhibit 7Y is a photograph illustrating the hydraulic centralizer testing machine readapted——

Q.82: What testing machine?

A. Hydraulic testing machine for [2642-412] testing centralizers, B & W centralizers, and it was readapted so that the tests we wished to make on the wall cleaning guides and the Weatherford close tolerance scratcher could be run on this same machine.

Q.83: I hand you a second photograph, which I will ask be marked at Petitioner's Exhibit 7Z, and ask you if you can identify this picture as to whether it was a picture taken at the time and place you have testified, and, if you will, testify what it is a picture of.

(The photograph referred to was marked by the Notary Public as Petitioner's Exhibit 7Z for identification, and made a part of this deposition.)

The Witness: Petitioner's Exhibit 7Z is a photograph of the same hydraulic machine, although the same machine does not appear in the photograph, as the machine was set up to run a close tolerance

(Deposition of William A. Doble.)

Weatherford scratcher in a cylinder mounted in the frame of the machine.

Q.84: Did you testify as to the day these photographs were taken?

A. These photographs were taken on May 27, 1953. All the photographs of this particular test were taken on the same day. [2642-413]

Q.85: At the same place?

A. At the same place, by the same photographer.

Q.86: Will you describe briefly this machine of Petitioner's Exhibit 7Y?

A. Referring to Petitioner's Exhibit 7Y, the machine includes a base "D." The letter "D" may be clearly observed on the front face of the base. Upwardly standing from the base are two upright channel irons, identified by the letters "C-1," and "C-2." Mounted in those channels, each is provided with a hydraulic cylinder, the first "B-1" and the second, "B-2." Extending upwardly from the hydraulic cylinders are piston rods. These are not identified by letter or number. To the upper end of the piston rods is connected a crosshead. Mounted in the central portion of the crosshead between the two piston rods is a fitting to which a piece of casing identified by the letter "A" was attached. Upwardly standing from the base "D" is a square shaft "E," which is arranged to enter into a square opening formed in the lower end of the casing "A."

Q.87: For what purpose?

A. For the purpose of preventing rotation of casing "A" and to maintain the casing "A" in

(Deposition of William A. Doble.)

correct [2642-414] centralized arrangement with respect to the cylinders which represent an oil well bore. In other words, the square rod "E" is a centralizer for the casing and prevents its rotation.

Mounted on casing "A" is a B & W wall cleaning guide which is mounted between two stop rings. The stop rings were secured to, or fastened to, the casing "A" by suitable setscrews. Supported on the standard "C1"- "C2" is a secondary framework upon which cylinders simulating a well bore could be mounted. The cylinder in Petitioner's Exhibit Y is identified by the letter "F1". The internal surface of the cylinder was blackened so that as the scratcher passed through the cylinder, the free ends of the scratcher wires could trace or scribe their true path on the blackened surface of the cylinder. Cylinder "F1" is a split cylinder; that is, it is formed of two halves bolted and dowel pinned together, so the effect during the operation was to make it a single cylinder.

There is a motor driven hydraulic pump mounted on the base of the machine and suitable control valves for operating the hydraulic cylinders to cause casing "A" to either move upwards or downward or stay in any set position.

Q.88: Now, this machine then differs [2642-415] from the machine which you testified about this morning, and as is shown in Exhibit 7K, in respect to the manner in which the simulated casing is raised and lowered, is it not?

(Deposition of William A. Doble.)

The Witness: That is correct.

Q.89: (By Mr. Lyon): How does it differ in that respect?

A. In Petitioner's Exhibit 7K the assembly of scratchers is mounted on a flexible spring steel band "12," whereas in Petitioner's Exhibit 7Y, a single scratcher is mounted upon a piece of casing and that piece of casing is supported on the crosshead so that it may be moved up and down directly due to the action of the pressure fluid in the hydraulic cylinders "B1" and "B2" and the cylinder is prevented from rotation and maintained in axial alignment by the square shaft "E."

Q.90: In Exhibit 7Y I note what appears to be a scratcher on the casing "A." Is that a scratcher?

A. Yes, sir, it is.

Q.91: What type?

A. That is the B & W wall cleaning guide.

Q.92: Was a test made of that particular scratcher? A. Yes, there was. [2642-416]

Q.93: Before describing that test, how was the wall cleaning guide mounted onto casing "A"?

A. The wall cleaning guide was mounted on the casing between two stop rings. The stop rings are spaced sufficiently apart as to permit some freedom of movement of the scratcher along the outer surface of the casing and also to enable the scratcher to rotate freely on the casing.

Q.94: How does that compare, if at all, with the manner of mounting of the scratchers on the simulated casing in Exhibit 7K?



Deposition of William A. Doble.)

A. In the same general manner, each mounted between spaced stop rings, each providing clearance for some longitudinal movement of the scratcher and each permitting free rotation of the scratcher on the simulated casing.

Q.95: Mr. Doble, you have testified that this particular scratcher was mounted on casing "A" of Exhibit 7Y for the purpose of a test. Was such test made? A. It was.

Q.96: Will you describe the test?

A. The machine was set up as shown in Petitioner's Exhibit 7Y. The motor driven fluid pump was put in operation. The control valve [2642-417] was operated to move the cylinder "A" downwardly and the cylinder "A" moved until it engaged the square rod "E," then progressed further until the wires of the scratcher engaged the bore of the cylinder "F1." The pressure was maintained in the cylinders so that the scratcher progressed down through the bore of cylinder "F1" until it reached the vicinity of the bottom of the bore in cylinder "F1," at which point the hydraulic valve was reversed and the casing was raised—casing "A" was raised until the scratcher reached the upper portion of the bore of cylinder "F1," then by means of the control valve, the scratcher was moved downwardly, then upwardly, downwardly, and then up and out.

Q.97: Was a trace of the scratcher wires observed at that time?

A. Yes, a trace—I observed, personally observed

(Deposition of William A. Doble.)

the action of the wires on the scratcher during all its upward and downward movement. I noted the reversal of the wires and I measured the rotation of the scratcher on the casing "A."

Q.98: You say the trace was observed, is that correct?           A. Yes, that is correct.

Q.99: Was there any photographic reproduction made of the trace produced in this [2642-418] particular test?

A. After the test was completed, cylinder "F1" was removed from the machine. It was divided in its two halves and each of the two halves was photographed. On one of the photographs——

Q.100: Just a moment, I hand you two photographs, marked for identification Exhibits 8A and 8B, and ask you if you can identify those photographs.

(The photographs referred to were marked by the reporter as Petitioner's Exhibits 8A and 8B for identification, and made a part of this deposition.)

The Witness: I have before me Petitioner's Exhibits 8A and 8B, which are photographs of the two halves of the cylinder "F1." The photograph has the letter "F" on the upper left-hand end of the flange with the figure "1" just below it. The second photograph is of the other half of the cylinder "F1" and on the flange, bolting flange, at the upper left-hand end is the identification "F2" and the photograph clearly illustrates the pattern made

Deposition of William A. Doble.)

y the wires of the scratcher during its travel up and down and out of the cylinder.

Q.101: (By Mr Lyon): You state that you had measured the amount of rotation. How did you measure the amount of rotation?

A. By putting a mark on the upper [2642-419] range or upper edge of the scratcher body and aligning that mark with a scribe mark on the periphery of the casing "A," and after each reciprocation or after each reversal measuring the amount of rotation of the scratcher with relation to the casing A."

Q.102: How, if at all, did that amount of rotation correspond with the spacing between the traces of Exhibits 8A and 8B?

A. Well, it corresponded directly. The traces indicate the amount of rotation, and the amount scribed on the cylinder is the amount the collar or body portion of the scratcher rotated with relation to the casing "A."

Q.103: I note on Petitioner's Exhibits 8A and 8B there are spaces between the vertical lines. The distance apart of those vertical lines is a certain measurement. Now, did that measurement compare in any way with what you observed by your scribe lines on the upper part of the cylinder or on the outside of the collars to be the actual rotation of the scratchers' first stroke? A. Yes. [2642-420]

\* \* \*

Q.104: Now, Mr. Doble, you have testified as to the rotation of the wall cleaning guides on several

(Deposition of William A. Doble.)

different tests. Have you anything to say with reference to what determines the rotation of a wall cleaning guide in a test of this kind?

\* \* \*

The Witness: Yes, the over-all length of the wires of a scratcher are of greater diameter than the internal diameter of the cylinder in which they have been operated, so that, first, due to the normal sidewise inclination of the wires, scratcher wires and secondly, due to the upwardly and sidewise inclination taken by the wires as they enter the smaller cylinder, that is, they are forced upward at an angle, sidewise angle, so that when the direction of travel of the casing is reversed the free ends of the wires engage the inside diameter of the cylinder, and there is sufficient friction to resist the sliding of the fingers along the cylinder during the reversal, at least a portion of the reversal, and the wires must be straightened before they can be inclined downwardly, and it is during that portion of the reversal that, in bringing the wires [2642-42] to a horizontal position, foreshortens the relation between the position the wires leave the surface of the scratcher, and as the wires are stiffened up resist that foreshortening they push the collar of the scratcher around on the casing upon which the scratchers are mounted. That takes place in the initial portion of the reversal, that is, from the upward and sidewise inclination of the wires, until the wires reach substantially a horizontal plane. There

(Deposition of William A. Doble.)

after the wires swing downwardly or angle downwardly and trace a pattern, a pattern having a spiral or sidewise motion on the cylinder in direct proportion to the amount of rotation of the body portion of the scratcher.

Mr. Scofield: Let us read that back, will you, please?

(The answer was read by the reporter.)

Q.105: (By Mr. Lyon): Mr. Doble, what did you mean by the statement "must be straightened"?

A. I mean by that that—I can probably illustrate that with a wire that you have here. I forget what exhibit number it is. I have now in my hand Petitioner's Exhibit 6Y, and I will assume the edge of the pad which I have to be the cylinder wall, and I will position the extending free end of the wire at an incline to the edge of the cylinder wall, [2642-422] as an illustration of how the wire might be bent up. It would not exactly follow the line that this particular wire takes because there are no pressures applied to put a bend in it, but it will give a graphic illustration of what I am talking about. So, we have a wire inclined upwardly as the scratcher is moved into the cylinder. Then we reach a point where the casing will be reversed in a direction of its travel. The wire——

Mr. Scofield: What angle have you got between the wire and the cylinder?

The Witness: Oh, I will say about 30 degrees, but that is only just an illustration I am making.

(Deposition of William A. Doble.)

I do not want to be tied to any particular angle at the present time. Any angle would do.

Mr. Scofield: When I asked you that you bent it up quite considerably, didn't you?

The Witness: Yes, but I am not—the amount of angle is of no importance particularly, it only has to do with the amount of rotation it will give. So I will take, say about 30 degrees. The direction of travel of the casing is reversed, the scratcher is reversed, the free end or point of the wire engages the cylinder, and we might say fulcrums about the point at which it engages the cylinder and swings——

Q.106: (By Mr. Lyon): By “the cylinder” you mean the [2642-423] inside wall of the cylinder?

A. The inside wall of the cylinder, and as the fixed or fastened end of the wire moves upwardly it has to move on an arc from the fulcrum point or free end of the wire, and now I have moved the wire until it is in the position I referred to as “straight.” By “straight” I meant at substantially a horizontal plane. Now the point——

Q.107: What did you mean by “must be straightened”?

A. I meant that it must pass through a horizontal or normal plane. I do not mean that the wire is going to be straightened out if it has any additional bends in it. I mean that the body of the wire will fall into a horizontal plane where it will extend the greatest distance from its point of attachment to the body portion of the scratcher to its fulcrum point on the inside wall of the cylinder.

(Deposition of William A. Doble.)

Mr. Scofield: The horizontal plane you are referring to is assuming that your cylinder is positioned in a vertical position rather than a horizontal position as you have it on the table.

The Witness: That is correct. Then we can take the distance from the fixed point or the point at which the wire leaves the periphery of the cylindrical portion of the scratcher body to the inside wall of the [2642-424] cylinder, which represents the well bore, and that is a distance, when the wire is at a 30-degree angle, of less than the length of the wire. Now, that difference in length will be the amount, substantially the amount, to which the body portion of the scratcher will be rotated during the swinging of the wire from its angle to we might say its horizontal position with relation to the plane of travel of the casing. Then as the wire leaves or as the scratcher travels upwardly further, there is no force tending to rotate the body of the scratcher back, so that it progresses upwardly as it is rotated, and the wire seeks a new path, and that new path is traced by the sidewise motion particularly noticeable at the lower ends of the scratched lines on Petitioner's Exhibits 8A and 8B. The greater the angulation of the wire from the body of the scratcher to the inside wall of the well the greater will be the rotation.

Q.108: (By Mr. Lyon): Now, Mr. Doble, you made the statement that the greater the length of the wire the greater the rotation; is that correct?



(Deposition of William A. Doble.)

A. That is correct, up to——

Q.109: If a wire, for example, was  $\frac{1}{8}$  of an inch longer, so that it gave an o.d. of  $\frac{1}{8}$  of an inch greater than the inside of the casing, how much [2642-425] rotation would that induce in the scratcher on the casing?

A. I think I can give you that. I have it. It would give you about  $\frac{1}{16}$ th of an inch rotation per stroke. During the three strokes I measured substantially a quarter of an inch rotation of the body or collar portion of the scratcher with relation to the scribe line on the casing "A."

Q.110: What is the diameter of a 14-gauge wire? Is it .072, Mr. Doble?

A. 14 gauge wire? I don't remember.

Mr. Scofield: I guess that can be stipulated, if we have a wire diameter table here.

Mr. Lyon: I have a table here, if I can find it. Here is a catalog, Mr. Doble. You find it.

Mr. Lyon: It has got to be in there somewhere. I saw it before. Look for a wire size cable.

The Witness: I am looking for the right one. There were several wire size cables, but it is the Birmingham, I believe, that I am looking for. Here we have it: the 14-gauge wire in the Birmingham or stub wire gauge is 83 thousandths.

Q.111: (By Mr. Lyon): 15-gauge wire?

A. 15-gauge wire is 72 thousandths.

Q.112: 16-gauge wire? [2642-426]

A. 16-gauge wire is 65 thousandths.



Deposition of William A. Doble.)

Mr. Lyon: You produce it, if you have it, if you have another one.

The Witness: There are several different wire gauge standards here and I was reading the Birmingham or stub wire gauge.

Q.113: (By Mr. Lyon): Using the U. S. standard, which is also before you, Mr. Doble, what is the size in that U. S. standard for 14-gauge?

A. The U. S. standard for 14-gauge is .078125.

Q.114: And for 15-gauge?

A. 15-gauge is .0703125.

Q.115: 16-gauge? A. It is .0625.

Q.116: I believe these wires are measured by the United States standard, are they not?

A. That I do not know.

Q.117: That is right, United States standard.

A. I think they are. I think it is identical to— it is according to where they are obtained. I think most of the dies in the U. S. Steel Company are U. S. standard. I believe Birmingham is used by Bethlehem.

Q.118: Mr. Doble, you were present at [2642-427] the time that there were some other photographs taken in this room during the taking of our depositions in chief here, at which time you and I and Mr. Scofield were present and Beans, my son Beans, took some photographs. I hand you a photograph of Exhibit M laid down with relation to Applicant's Exhibit 16. I ask you if you observed that photograph being taken?

(Deposition of William A. Doble.)

A. No, I did not; I was not present in the room when any photographs were taken.

Mr. Scofield: I believe the exhibit you have read Mr. Lyon, has the exhibit number of the scratches

Mr. Lyon: Yes, it is exhibited on the scratches on the cylinder, Exhibit 16, and I will offer the photograph in evidence at this time as the exhibit next in order, being the photograph taken at that time. [2642-428]

\* \* \*

Q.120: Mr. Doble, you testified to a further test made at this time, in May of this year, at the L & Machine shop using the machine in [2642-429] Exhibit 7Z. A. 7Y.

Q.121: 7Z. And I hand you a photograph which I will mark Exhibit 8D for identification and ask you if you can identify this picture, and if so, what it is?

Mr. Scofield: Have you the print of that? I will save me from mixing up these exhibits here.

Mr. Lyon: Here is a set of exhibits, including the ones I will put in.

(The photo referred to was marked by the reporter as Petitioner's Exhibit 8D for identification, and is made a part of this deposition.)

The Witness: Petitioner's Exhibit 8D is a photograph of the testing machine, Petitioner's Exhibit 7Y, reassembled with the assembly changed to that shown in Petitioner's Exhibit 7Z. In Petitioner's

Deposition of William A. Doble.)

Exhibit 7Z, a cylinder "H" has been mounted on the framework of the machine and that cylinder has mounted within it a subcylinder of less diameter. The diameter of the subcylinder was 6-7/16ths inches in diameter. A Weatherford close tolerance type of scratcher was mounted on the casing "A" between spaced stop collars, as shown in Petitioner's Exhibit 7Z, in such a manner as to provide a limited amount of longitudinal movement of the scratchers as well as free rotation of the scratcher in [2642-430] the cylinder "A."

With the assembly, as shown in Petitioner's Exhibit 7Z, the motor force was put in operation applying oil under pressure. Through suitable control valves the oil was admitted to the hydraulic cylinders and the scratcher—that is, the Weatherford close tolerance scratcher was moved down into the subcylinder which is mounted within the cylinder "H." After the scratcher traversed the subcylinder for about 12 inches, the direction of travel of the casing "A" was reversed.

I was watching during this entire operation the wires. I noticed that on reverse travel of the casing "A" the wires of this Weatherford scratcher did not reverse but slid up the inside surface of the subcylinder and traveled or skidded along the inside surface of the cylinder until all of the wires left the opening at the upper end of the cylinder, without a single wire reversing.

Q.122: Now, Mr. Doble, I will hand you a further photograph which I will mark Exhibit 8E. I will

(Deposition of William A. Doble.)

ask you if you can identify this photograph and state what it is.

(The photograph referred to was marked by the Notary Public as Petitioner's [2642-43] Exhibit 8E for identification, and is made a part of this deposition.)

The Witness: Referring to Petitioner's Exhibit 8E, which is a photograph of the Weatherford close tolerance scratcher just as it appears complete withdrawn from the subcylinder, which I previously referred to and which is mounted within the large cylinder "H," it may be noted that the wires of this scratcher are angled slightly upwardly, showing that they took a deformation during the travel of the wires down into the subcylinder and up and over of the subcylinder. That will be noted, if one compares Petitioner's Exhibit 8E with Petitioner's Exhibit 7Z.

Q.123: Now, Mr. Doble, I hand you a third photograph which I have marked for identification as Exhibit 8F, and ask you if you can identify this photograph?

(The document referred to was marked by the reporter as Petitioner's Exhibit 8F for identification, and made a part of this deposition.)

The Witness: Exhibit 8F is a photograph illustrating the same testing machine and showing the Weatherford close tolerance scratcher as the lower

(Deposition of William A. Doble.)

row of wires is finally emerging from the subcylinder. Exhibit 8D shows the points of the wires sticking upwardly of the [2642-432] upper row of wires in the Weatherford close tolerance scratcher as the scratcher was being moved up and out of the subcylinder.

Q.124: (By Mr. Lyon): What does the arrow on Exhibit 8D indicate, Mr. Doble?

A. That indicates the direction of travel of the casing at that time.

Q.125: Will you mark on the exhibit just the arrow which you and I refer to, on the exhibit which is in the record? A. On 8D?

Q.126: Yes, on 8D. A. Where is 8D?

Q.127: There is 8D. Mark the word "arrow."

A. I have placed the word "arrow" with a lead line pointing to the arrow, which I have just referred to on Petitioner's Exhibit 8D.

Q.128: Mr. Doble, if the scratcher which you have shown in Exhibit 8D had reversed, would the wires be extending upwardly in the direction they are shown in Exhibit 8D?

A. They would not. You would not see them in that particular position. They would be direct downwardly in the bore of the subcylinder, which can be clearly seen in Petitioner's Exhibit 8D. [2642-433]

Q.129: Similarly looking at Exhibit 8F, in which direction was the cylinder going at that time?

A. It was going upwardly and the scratcher wires were going out of the subcylinder.

(Deposition of William A. Doble.)

Q.130: What does this photograph show with respect to the lower row of wires?

A. The lower row of wires are almost entirely—have almost entirely moved out of the subcylinder and are shown pointed upwardly as they were confined and traveled upwardly in the subcylinder during the up travel of the casing “A.”

Q.131: Would those wires be shown upwardly inclined if the scratcher had reversed during the operation?

A. No, they would not. They would be pointing downwardly instead of upwardly.

Q.132: I see, Mr. Doble, we have one further photograph which has not been introduced, which I hand you at the present time, and I will ask you if you can identify this photograph. I have marked it Petitioner’s Exhibit 8G.

(The photograph referred to was marked by the Notary Public as Petitioner’s Exhibit 8G for identification, and made a part of this deposition.) [2642-434]

The Witness: Petitioner’s Exhibit 8G is a photograph taken to show the guide and centering hole, that is, the square hole in the lower end of the casing “A” which rides over the square shaft over rod “E” so as to maintain the casing in correct alignment and absolutely prevent rotation of the casing with relation to the square shaft or the cylinder which represents the well bore.

Q.133: (By Mr. Lyon): Mr. Doble, I hand you

(Deposition of William A. Doble.)

a scratcher, and ask you if you can identify the scratcher.

A. Yes, this scratcher which you have handed to me is the scratcher which was run through the cylinder marked "F1" in the test on May 27 taken in Long Beach.

Mr. Lyon: I will ask that this scratcher be received in evidence as Petitioner's [2642-435] Exhibit 8H.

\* \* \*

Q.134: (By Mr. Lyon): Now, Mr. Doble, I will hand you a further scratcher and ask you if you can identify this? A. Yes, I can.

Q.135: What is this scratcher?

A. The scratcher which you have just handed to me is another one of the scratchers which we ran through a cylinder on May 27th in the hydraulic testing machine which I have been testifying in regard to. This particular scratcher has an over-all diameter of  $8\frac{7}{8}$  inches, that is a diameter across the free ends of the wires of  $8\frac{7}{8}$  inches.

Q.136: How does this compare with the diameter, the over-all diameter of the scratcher Exhibit 8H?

A. It is an eight of an inch larger in diameter. It is  $8\frac{7}{8}$  inches in diameter over the ends of the wires.

Q.137: What is Exhibit 8H?

A. 8H is  $8\frac{3}{4}$ .

Mr. Lyon: I will offer this scratcher in evidence as Petitioner's Exhibit 8I.

(Deposition of William A. Doble.)

(The scratcher referred to was [2642-436] marked by the Notary Public as Petitioner's Exhibit 8I, and made a part of this deposition.)

Q.138: (By Mr. Lyon): You say this Petitioner's Exhibit 8I was also run in a test on May 27th?

A. Yes, it was.

Q.139: Through a cylinder? A. Yes.

Q.140: A darkened cylinder? A. Yes, sir.

Q.141: Was a tracing made? A. Yes, sir.

Q.142: Was a photograph made of the tracing?

A. Yes, sir.

Q.143: I hand you two photographs, which I will mark as Petitioner's Exhibits 8J and 8K, and ask you if you can identify these photographs?

(The photographs referred to were marked by the Notary Public as Petitioner's Exhibits 8J and 8K, respectively, and made a part of this deposition.)

The Witness: Petitioner's Exhibits 8J and 8K are the tracings made in the cylinder "G," and it will be observed that the letter "G1" was placed on the upper left-hand flange of Petitioner's Exhibit 8J, and that the letter "G2" was positioned in the upper left-hand [2642-437] flange of Exhibit 8K. In this test Petitioner's Exhibit 8I was mounted on the machine. The cylinder "G" was bolted together so as to form a true cylinder. The inner surface was blackened, the scratcher, Exhibit 8I, was run down until the wires reached approximately or



(Deposition of William A. Doble.)

adjacent the lower end of the cylinder, and then the direction of travel of the casing "A" was reversed, and the scratcher was lifted until it left the bore of cylinder "G," and it will be observed that during the downward travel the wires scratched a straight line until they reached the lower point, at which point the reversal took place, and during which the body or collar portion of the scratcher was rotated, and following the reversal the wires traced out a new pattern on the surface, inner surface of the cylinder, and that line extends straight up and finally leaves the upper end of the cylinder.

Q.144: (By Mr. Lyon): Mr. Doble, do you know why——

A. Pardon me, I wanted to put this in: The rotation of Petitioner's Exhibit 8I as I measured it with relation to the casing "A" was for the one down and out operation almost exactly one-quarter of an inch, showing a greater rotation due to the longer length of the wires than was obtained in a corresponding single stroke made by the wall cleaning guide, [2642-438] Petitioner's Exhibit 8H during its travel down and up in a similar blackened cylinder.

Q.145: Mr. Doble, you have testified with respect to the close tolerance Weatherford scratcher as shown in Exhibits 8D, 8E and 8F, and the fact that that scratcher did not reverse. From your experience with these scratchers can you state the reason for the reversals and the reason that the Weather-

(Deposition of William A. Doble.)

ford scratcher of these exhibits that I have just pointed out, did not reverse?

\* \* \*

The Witness: Yes, I will be glad to do so. In operating scratchers in a metal cylinder there is a limit as to the length which the wires can be made. Beyond this limit the wires, that is, if you exceed in length the critical length of the wire, the wire will engage the inner wall of the steel cylinder and will merely slide upwardly against the wall of the cylinder, whereas, if the wires are below that critical length the ends of the wires will engage the inner surface of the cylinder and will fulcrum about that point of engagement and reverse in direction and will not skid up the inside of the cylinder bore.

Q.146: (By Mr. Lyon): Now, Mr. Doble, in a cement [2642-439] cylinder or in a cylinder simulating or in an oil well will such a non-reversal occur?

A. It may or it may not. The chances are it would not, because in some oil well conditions, the well bore is of a material that is softer in nature than a steel cylinder, and there are certain irregularities which the wires of the scratchers can or could lodge against and fulcrum against, so that there would be or could be rotation in that type of operation as against a smooth cylinder.

Q.147: In a producing sand of an oil well would the wires slide upwardly or downwardly without reversing?

\* \* \*

Deposition of William A. Doble.)

The Witness: In my opinion the wires would reverse in a producing sand, even though they would not reverse in a steel cylinder of the same diameter.

Q.148: (By Mr. Lyon): Now, Mr. Doble, you made some tests using a cement cylinder. Did you observe any failure at all of the reversal in that cement cylinder?

A. No, sir, I did not. [2642-440]

Mr. Lyon: Let us take a short recess.

(A short recess was here taken.)

Q.149: (By Mr. Lyon): From the tests which you have made, from the studies that you have made of this matter, Mr. Doble, from an engineering standpoint and from the evidence which is available, can you state whether or not in your opinion the scratchers, Figures 14, 16 and 26 of the Jones & Berdine report rotated during the tests that are reported in that report?

Mr. Scofield: That is objected to as calling for a conclusion based upon a hypothetical situation; also as improper rebuttal testimony.

The Witness: Yes, sir, I believe there is clear evidence that the scratchers in the figures you have enumerated rotate, as is exemplified in the cast cement cylinders depicted in the Jones & [2642-441] Berdine report.

\* \* \*

DEPOSITION OF KENNETH A. WRIGHT  
a witness produced on behalf of the Petitioner, having  
been first duly sworn to testify the truth, the  
whole truth and nothing but the truth, upon the  
interrogatories, deposed and testified as follows:

Direct Examination

By Mr. Lyon:

Q.1: Will you state your name?

A. Kenneth A. Wright.

Q.2: What is your occupation, Mr. Wright?

A. I am a manufacturer of oil tools.

Q.3: How long have you been in that business?

A. Since approximately mid-year 1939.

Q.4: What type of tools?

A. Tools used in cementing and well completion,  
principally.

Q.5: You are the Kenneth A. Wright who is  
the patentee of U. S. Letters Patent Nos. 2374317,  
and 2392352 and 2338372, are you not?

A. I don't know those numbers by memory, but  
if you will put them before me, why, I will confirm  
the numbers again.

Q.6: All right, here they all are.

The Witness: Mr. Reporter, would you repeat  
the numbers so that I may identify them? [2644]

The Reporter: 2374317.

The Witness: That is correct for that one.

The Reporter: 2392352.

The Witness: That is correct for that one.

The Reporter: 2338372.

The Witness: That is correct for that one.

(Deposition of Kenneth A. Wright.)

have not examined the text. I am assuming that the cover page is correct.

Q.7: (By Mr. Lyon): Mr. Wright, before your experience in this scratcher patent matter, did you ever have any patent experience before?

A. I have never applied for a patent before that initial one that shows in this series just read.

Q.8: Did you ever have any dealings with patents before you applied for your first patent as shown above?

A. I had a deal with a fellow in the early '20's, and he was the applicant for a patent, and nothing came of it.

Q.9: Did you ever enter into a patent contract of any kind or character before this contract of March 15, 1944?

A. I don't understand what you mean by "patent contract."

Q.10: Well, an agreement affecting patent rights.

A. Well, there is some understanding [2644-3] between B & W and myself. You exclude those?

Q.11: Yes, I will exclude those in this.

A. Other than that just mentioned, that one is the first one.

Q.12: Did you ever have any knowledge of or acquaintance with a proceeding known as an interference proceeding before your experience with your scratcher applications and patents?

A. That is my first experience with patent interferences.

(Deposition of Kenneth A. Wright.)

Q.13: Were you ever engaged in any patent litigation before this scratcher situation, either as a party or a witness?

A. That is my first experience.

Q.14: You have heard the testimony of Mr. Barkis, have you not?

A. Most of it. I was not here every minute of his testimony.

Q.15: When was B & W formed?

A. I believe the incorporation date is June 25 or 28, approximately, 1939.

Q.16: What was the purpose of the formation of the B & W?

A. To provide for a corporation relationship between Mr. Barkis and myself to develop and manufacture and [2644-4] sell oil tools.

Q.17: At the time of the formation of B & W, did you have any particular tools or project in mind?

A. At the time the B & W was formulated and subsequently incorporated, I had in mind the idea of abrading the well wall with devices on the casing during cementation and during the landing of perforated screen.

Q.18: Had you discussed that matter with Mr. Barkis before the formation of B & W?

A. I had.

Q.19: Did that idea have anything to do with the formation of B & W?

A. It was part of the very basic arrangement

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resulting in B & W becoming incorporated and going into the initial work.

Q.20: Had you explained fully to Mr. Barkis your ideas with respect to a scratching of an oil well to remove the mud cake prior to the formation of B & W?

A. The idea of abrading the wall accompanied by circulation was fully discussed. The specific tools came progressively later.

Q.21: Are you a graduate engineer, Mr. Wright?

A. My degree reads "Department of Geology, Bachelor of Science degree."

Q.22: Of what university? [2644-5]

A. Stanford University.

Q.23: What year?

A. My diploma is dated in 1921, according to my recollection.

Q.24: Since you graduated from Stanford University to what industry have you devoted your time?

A. To the petroleum industry.

Q.25: In that capacity what have you done?

A. May I make an exception?

Q.26: Yes.

A. If the manufacturing of oil tools, selling and servicing them is part of that, that is my answer.

Q.27: Since you graduated from Stanford University what have you done in the oil industry?

A. You mean by that my employment?

Q.28: Yes, your employment.

A. My initial employment after graduation was with the Associated Oil Company as a, then called

(Deposition of Kenneth A. Wright.)

field geologist, which meant the combined duties of petroleum engineer, as we call it today, and a general association of the work with the development of the wells. The next employment, as I recollect, was with the Pan-American Petroleum Company, starting about mid-year 1923, and that employment was as a petroleum engineer, associated with the drilling and development of an oil field, [2644-6] drilling practice, and some production practice, and part of that was keeping the well records and determining the point at which total depth of the well, cementing depth of the well casing program and supervision of cementing operations, together with coring, surveying incidental to that type of work.

In or about January, 1928, I was employed by a firm, corporation named Trinidad Leaseholds, Ltd., on the Island of Trinidad, British West Indies, as drilling superintendent for the company. I worked in Trinidad in that capacity until sometime in late 1930 or thereabouts.

In the fall of 1930, after returning from Trinidad, I was associated with a company named Young Petroleum Corporation as vice-president and petroleum engineer, and that did not require my entire services, so I did some work as consultant to individuals requiring that type of engineering service.

In 1935 I was retained as a consultant for a company in Sydney and Adelaide, Australia, for geological work, and at the same time retained my



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association with Young Petroleum Corporation. My association with the Australian company terminated in or about November of 1938. It might have been October, I am not sure, and I returned to the United States, and shortly thereafter formed this association with Mr. Barkis, which has existed up until this [2644-7] date.

Q.29: Where did you first meet Mr. Barkis?

A. My first acquaintance with Mr. Barkis starts with—my acquaintance with Mr. Barkis starts shortly after I was employed by the Pan-American Petroleum Corporation. He came to work with the company shortly after my employment.

Q.30: Are you acquainted with the exploratory work done by Jones & Berdine of the Union Oil Company?

A. I am familiar with that report and the work they did.

Q.31: When did you first learn that they were doing that work or going to do that work?

A. My present recollection is that the project was already in operation when Mr. Barkis and I discovered or found out about it, and that period——

Q.32: Do you recall how you found out about it?

A. My present recollection is that Mr. Jones phoned Mr. Barkis and asked him to supply equipment for the operations which they had under observation.

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Q.33: I believe I interrupted your previous answer, Mr. Wright.

A. I have lost the trend of thought.

(Previous answer read.)

The Witness: I am not certain of the exact date, but my recollection is December, 1939.

Q.34: (By Mr. Lyon): Did you supply equipment in [2644-8] accordance with Mr. Jones' request? A. Yes.

Q.35: Did you take any of the equipment Mr. Jones yourself?

A. Yes, I took, according to my present memory, two devices over to the place where the operation they were conducting was taking place.

Q.36: Are you familiar with the test apparatus that was used? A. Yes, I am.

Q.37: Are you familiar with the tests that were made?

A. Assuming I understand what you mean "familiar" I know how they were carried out and the mechanics of their operation, and what they purported to exhibit and demonstrate.

Q.38: Were you present when any of the actual testing operations were performed, Mr. Wright?

A. Well, if you would point out just what part of the operation you mean by "testing," or shall I proceed without that?

Q.39: Well, I will be glad to. I mean the actual mounting of the devices in the test apparatus and

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the operation of the apparatus itself to perform the tests, was what I meant. [2644-9]

A. Do you wish me to describe one?

Q.40: No, I want to know first: Were you present?

A. I was present when the actual cementations were made on, I believe, two tests, meaning by that the period in which the mud fluid was pumped into the casing and discharged into the annulus and to the waste line, reciprocation of the casing during cementation, and the time when the cementation actually ceased.

Q.41: Generally what type of devices were under test at the time that you were present?

A. My present recollection was one of our devices, that is, meaning by "our" there were more than one series of tests made on the same general equipment, and I do not recollect the particular device or what company might have furnished the device on the other one.

Mr. Lyon: We will adjourn at this time until 1:00 o'clock.

(A recess was here taken from 12:00 noon to 2:00 p.m.)

Q.42: (By Mr. Lyon): You are familiar, you are, with the apparatus that was used by Jones & Erdine in making these tests at Dominguez Hill. Have you any photographic illustrations of that equipment, Mr. Wright?

A. The equipment itself?

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Q.43: Yes. [2644-10] A. The test wells?

Q.44: The test wells.

A. The test wells, I think I have.

Q.45: I hand you two photographs and ask you if you can identify these?

A. Yes, sir, these appear to me to be photographs taken of the apparatus which Mr. Jones and Mr. Berdine designed and built to carry out the tests, and the second one is not clear as the first and I think part of it is a double exposure, but I am not an expert in photography.

Q.46: But both of these pictures are pictorial representations of the test wells that were used in this Jones and Berdine determination, are they?

A. Yes, they are.

Mr. Lyon: I will offer the two photographs in evidence as Petitioner's Exhibits 4A1 and [2644-11] 4A2.

\* \* \*

Q.47: (By Mr. Lyon): You testified that you were present when some of the test operations were performed by Jones and Berdine. Do you know when that was?

A. My present recollection is that these tests were in December, 1939, and I believe the first part of January, 1940.

Q.48: Was there more than one test operation performed with B & W scratchers by Jones and Berdine? A. Yes, there was more than one.

Q.49: And these were all performed, were they during this period of time that you have specified

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as you recollect?           A. That is correct.

Q.50: Were all the tests performed with the same scratcher?

A. No. Let me ask you the question: You mean the same identical mechanical unit or——

Q.51: I mean the same identical mechanical unit first, or units, unit or units.

A. My recollection is that I gave Jones two scratchers, and those are the two which punched the hole in the canvas bag, and then I am of the opinion that those two were reusable. I have heard Mr. Jones' testimony, and I note what he said, and I believe I supplied several more, [2644-12] but the exact number I do not know, and I have very carefully examined his photographs so as to clear up my memory, the best I can tell you.

Q.52: You are familiar, then, with the photographs Mr. Jones took of this apparatus?

A. I saw the initial report which he made and was given to the API, and obtained several copies of the entire report on the day he gave the report, and examined it thoroughly, and subsequently I obtained what is now Exhibit L in this deposition, and which has the photographs.

Q.53: We will have to break that down a little bit. You were present, then, when Mr. Jones gave his report at the API meeting, were you?

A. At the Biltmore Hotel in Los Angeles.

Q.54: When?

A. My recollection is March 18 or 19, and the

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date of the paper is whatever it reads. That is my best evidence.

Q.55: The reprints, were they handed out at the time Mr. Jones gave his report?

A. That is correct. They were on large—on tables along the wall, and this report of Mr. Jones and Mr. Berdine was a unit form, and along with other papers which were given by other authors on other subjects, and my recollection was that it was one large envelope in which [2644-13] were contained the copies of the papers given at that particular meeting.

Q.56: You have also testified that you also obtained, and I presume for the purpose of this proceeding, the precise report, Exhibit L; is that correct? A. I obtained that myself.

Q.57: From where did you obtain that?

A. From Mr. Henry A. Winter.

Q.58: Where?

A. I obtained it from him at his office in Whittier, California, when the Union Oil Company offices had been moved from Santa Fe Springs to Whittier, and he gave it to me personally.

Q.59: Is Mr. Winter still in the employ of the Union Oil Company? A. I believe he is.

Q.60: You have testified that you are familiar with the photographs which accompanied this report, and I am handing you Exhibits F, G, H, I, J and K, and ask you if these are the photographs that you refer to, or are these copies of the photographs you refer to?

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A. May I compare them to the report? F is correct, G is correct, H is correct, I is correct, J is correct, and K is correct.

Q.61: Then your answer is that these [2644-14] are the photographs that you stated you were familiar with? A. That is correct.

Q.62: Figure 14 shows a scratcher. Are you familiar with that scratcher? A. Yes, I am.

Q.63: Is that a scratcher that you furnished, or B & W furnished to Jones and Berdine?

A. This is a scratcher which was furnished by B & W to Jones and Berdine.

Q.64: Now, I hand you a photograph, Exhibit K, and I will call your attention to the fact that there are two billets. How many scratchers are there shown in that figure, in that exhibit?

A. There appear to be four; one, two, three, four.

Q.65: Do the four scratchers appear to be the same?

A. There are two different, two separate billets, and in the upper part of the photograph are clearly seen two different scratchers, that is, one on each, with the outer ends formed reasonably the same, and in the lower two there is one on each that is not near as distinct. There is a chopped-away portion, meaning a chopped-away part of the cement to indicate the location of a device within the billet. [2644-15]

Q.66: Do you have any recollection of any of these scratchers having been recovered from the cement billets?



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A. I am under the memory and believe that on set, at least, were reused.

Q.67: I hand you a photograph, Exhibit G, and I will ask you to tell me what that photograph shows?

A. This photograph shows the second general form we have used, a B & W scratcher, and is a modification of the one I have just referred to, Exhibit F, and I note in the wire and clip arrangements what I believe to be cement.

Q.68: Will you just mark what you are referring to with the word "cement" with a lead line, Mr. Wright?      A. What shall I put out here?

Q.69: Just the word "cement." What does the appearance of that cement as you have marked it on the photograph Exhibit G indicate to you, Mr. Wright?

A. That it was recovered from a previous test run and cleaned up and modified and reused.

Q.70: Now, I show you a photograph, Exhibit I, and ask you if you can identify that?

A. Yes, that is a scratcher which B & W supplied to Mr. Jones and Mr. Berdine.

Q.71: Was this what you would refer to as a third [2644-16] form?

A. This is a third form used, disregarding the first form which did not ever arrive at a finalized observable test, if that is what you mean.

Q.72: Considering all forms, that is, the first form that did not result in a finalized test, and the three forms of scratchers as shown in the photo-



Deposition of Kenneth A. Wright.)

graphs as you have identified them, Exhibits F, G, and I, how were the scratchers mounted?

A. All of these scratchers were mounted on the three and a half inch casing, between rings which operated as upper and lower stops, and the devices were free to slide between the stops and free to rotate on this casing at all times.

Q.73: I call your attention to the fact that there are no such stops shown in Figure 14. This in Figure 14. How do you account for that?

A. Well, I heard Mr. Jones' testimony, and I had previously asked him for an explanation, so I am aware of that, but wholly independent of that this picture, if examined closely, shows no welding of any nature whatsoever or any engagement whatsoever between the scratcher collar and the three and a half inch casing and, in fact, close inspection shows an open portion on the right-hand part of the joint where the collar and casing are adjacent to [2644-17] to each other. You can easily see it, you could push a knife blade down between there, or some object of a thickness almost as thick as the scratcher collar itself, which I know to be 14 gauge.

Q.74: Now, Mr. Wright, did you observe any of the results of any of the tests conducted by Jones and Berdine for the Union Oil Company?

A. I saw, as I remember, the billets after they were recovered from the operation, which was accomplished by dismantling the devices, that is, the test wells, from the apparatus, placing it on the ground and unbolting the simulated wall, which was

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a 7-inch steel casing, and then slitting the canvas, and the observations were made by the Union Oil Company men, principally Mr. Jones and Mr. Berdine.

Q.75: From your observation of these tests, watching them, from your observation of the billets, that resulted from them, and from your knowledge of the structures as shown in these photographs, can you state whether or not the scratcher rotated on the pipe during each of these tests? [2644-18]

\* \* \*

The Witness: Well, observations during the cementation of——

Q.76: (By Mr. Lyon): Just answer the question, can you or can't you?

A. I can. I believe that the three sets of billets which are pictures in Exhibits K, J, and H, indicate and show that the device in each of those instances rotated on the casing between the stops during the period that the cement slurry was pumped past it.

Q.77: At what part of the reciprocation did the scratchers rotate?

A. The Scratchers, according to my analysis, rotate immediately——

\* \* \*

The Witness: ——after the direction of reciprocation takes place, and for a very short distance of travel thereafter.

Q.78: (By Mr. Lyon): Did these scratchers rotate only during the time that the cement was being pumped in these simulated wells?

(Deposition of Kenneth A. Wright.)

A. The scratchers while being reciprocated, when mounted in the manner indicated between these stop rings, rotates with the reciprocation and wholly irrespective of the fluid that is passing by it.

Q.79: Were any of these scratchers [2644-19] as shown in Exhibits F, G, and I, sold to the Union Oil Company?

A. These scratchers shown in figures, Exhibits F, I, and G, were not sold to the Union Oil Company.

Q.80: Were any scratchers sold to the Union Oil Company for their use in the Jones and Berdine tests? A. None were by B & W.

Q.81: To your knowledge, did the Union Oil Company purchase scratchers from B & W about this time?

A. The Union Oil Company started buying scratchers from B & W shortly after the tests were concluded, and I don't know the exact date other than what I have seen brought into evidence here.

Q.82: Was the purchase of the scratchers by the Union Oil Company the result of any recommendation made by Jones and Berdine, to your knowledge?

A. It was my understanding or my information at that time that scratchers made by B & W were to be, were recommended to the Union Oil Company for standard practice—usage, I mean by that, and such recommendations were made.

Q.83: It is true, is it not, Mr. Wright, that the reason that you furnished these scratchers to Jones

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and Berdine for these tests was to get such recommendation, if possible; was it not? [2644-20]

\* \* \*

Q.84: (By Mr. Lyon): To your knowledge, were you or were you not in competition with other manufacturers endeavoring to furnish equipment or methods of Jones and Berdine for accomplishing this same purpose?

A. Yes, the whole set of observations and tests which Jones and Berdine carried out were, to some degree, competitive between manufacturers to supply something that they could take and use and obtain satisfactory cementations in their field operations.

Q.85: During the time that these Jones and Berdine tests were being carried out, do you have any recollection of carrying on any other operations with the B & W scratchers?

A. Coincidental with, or simultaneously, about the same time that these tests were being carried out, Mr. Barkis and myself concluded this was a satisfactory, usable tool to use in the petroleum industry in the cementing of wells, and decided to spend the money to go into it in an extensive way, as far as our finances would permit.

Q.86: I notice that in the Jones and Berdine report these devices are called "scratcher." Did you use that term when you started to exploit these scratchers of B & W? [2644-21]

A. We used the term "scratchers" between ourselves, and very limitedly otherwise.

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Q.87: Why?

A. Well, the word "scratch," and I am speaking now of 1939 and 1940, is a word which oil field operators, and I mean by that the people who are responsible for getting the casing into the bore hole, was extremely objectionable, and it implied an operation which could result in casing being stuck, and a failure to get the casing to the bottom, and other remarks, but principally the device would scratch the filter cake off to a point and to a degree that would hazard the casing becoming placed at its objective point.

Q.88: So in the early operations you adopted another name for these devices; is that correct?

A. We discussed at great lengths what name we should give it, and concluded that the words "wall cleaning guide" would be the best name.

Q.89: Now, you stated that during the Jones and Berdine tests that you had another operation using these scratchers. What was that other operation? A. You mean the actual cementation?

Q.90: Where was it located?

A. A well?

Q.91: Yes. [2644-22]

A. Well, we sold to Thomas Kelly & Sons, an oil field operator of Long Beach, Rosecrans area, a set of scratchers to be used on a well that they termed McMillan Community No. 1 in the Rosecrans Field.

Q.92: Where was that well located?

A. It was in the southeast portion of the Rose-

(Deposition of Kenneth A. Wright.)

crans Oil Field, near the Redondo Beach Boulevard-Main Street intersection.

Q.93: Who sold that job to Thomas Kelly & Sons, do you recall?

A. I believe I sold the——

Q.94: Who did you sell on using the scratchers?

A. I sold Mr. Laurence Kelly and his brother Maurice Kelly.

Q.95: When, with relation to the actual use of the scratchers, did you sell them on the idea of using them?

A. The actual confirmation of sale took place on the—as I recollect it, on the morning or the previous afternoon, but I believe it was the morning of the day that the casing was started into the hole.

Q.96: Had you known either Laurence or Buck or Maurice Kelly before that time?

A. Yes, I had known the two Kelly boys for some time before.

Q.97: That is, you had known them for some time [2644-23] before you sold them on this use of scratchers?

A. Yes, I had known the Kellys for several years.

Q.98: Did the Kellys make any inquiry at the time you sold them as to how these scratchers or well cleaning guides, or whatever you called them at that time, were to be mounted on the casing?

A. Yes, sir, they asked me how they operated and what they would accomplish if they purchased

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them, and how it would affect their particular problem on that well.

Q.99: Were any arrangements to be made with the Kellys as to who was to supervise the installation of these scratchers?

A. Mr. Kelly asked me if they purchased would we come to the well and supervise the entire operation, and I mean by "supervise" within the limitation that sellers or vendors of equipment ordinarily extend their operations.

Q.100: Now, did you go to the Community No. 1 Well?        A. At what time?

Q.101: At any time.

A. On the afternoon of December 30, 1939, I went to the well, and it is according to my recollection I took the scratchers to the well, but Mr. Barkis was [2644-24] there simultaneously, so I don't recall whether he went in his car and me in mine, but these scratchers were taken to the McMillan Community No. 1 Well on that date.

Q.102: By you?

A. According to my recollection, I took them.

Q.103: How many scratchers?

A. There were twenty-three scratchers used on that well, according to my records and recollection.

Q.104: What size were the scratchers?

A. The scratchers were for use on 6 $\frac{5}{8}$ -inch API casing.

Q.105: Were the scratchers mounted on the casing?



(Deposition of Kenneth A. Wright.)

A. The scratchers were mounted on the casing at the well rack.

Q.106: Did anybody supervise the installation of these scratchers on the casing?

A. I supervised the installation.

Q.107: Of all twenty-three scratchers?

A. Yes, that is right, every one.

Q.108: Did you inform anyone as to how the scratchers were to be mounted on the casing?

A. Yes.

Q.109: Who did you so inform?

A. The welder which Thomas Kelly & Sons had employed to do the mounting. [2644-25]

Q.110: Do you remember that welder's name?

A. I didn't remember it at that time, but subsequent incidents have made his name familiar to me.

Q.111: Was anyone else present at that time?

A. Do you mean by that the time in which the——

Q.112: Your scratchers were mounted on the casing.

A. Yes, there were other people present.

Q.113: Who?

A. My present recollection is the time when the operation started, I mean by that, the mounting of the casing—of the scratchers on the casing was in the middle or late afternoon, getting near the time of tour change, which would be at 4:00 o'clock in the p.m. Mr. Laurence Kelly and Mr. Maurice Kelly were there during at least the start of the



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mounting, and for a considerable time because, let me interject, they were interested in seeing what the device looked like and how they were mounted, and, in further particulars, that the location of them on the casing coincided with the location as far as they would be in the well when the casing was cemented in relation to the electric log observations, which indicated some productive sands were in the well above the point where they were to cement the 6 $\frac{5}{8}$  casing.

Q.114: Who else was present?

A. Mr. Sweetzer was there at some [2644-26] time.

Q.115: Who else?

A. And later he was there continuously, as I recollect it; the welder I have just referred to, the drilling crew which was then coming out of the hole, and the driller I was personally acquainted with, Mr. Ernest Edmonds, and I believe one man of his crew was a man I had known, and the man that came——

Q.116: Who was that man?

A. Right now I believe it was Gioia, but the report is the best evidence.

Q.117: Gioia?

A. Yes, Gioia, and when the afternoon tour came on and—at this moment I don't remember any name in that crew.

Q.118: Do you recall the incident of one of these joints of casing slipping off the rollers at that time?

(Deposition of Kenneth A. Wright.)

A. If I may correct you, slipped off the blocks which were used to prop up the scratchers from dropping down on the casing, the rig walk, and when they pulled it up with the cat line I confirmed no damage was done.

Q.119: How did you confirm it?

A. By rotating it on the casing, so that we were very sure that the thing was free.

Q.120: Did you finish your previous answer?

A. No. [2644-27]

Q.121: If you will, please. Don't let me interrupt you.

I wanted to state, and I don't know whether I have or not, all the scratchers mounted on this 6 $\frac{5}{8}$ -inch casing were under my supervision mounted between beads built up on the casing by this welder, and these rows of beads, I mean by "rows" around the casing, were approximately twelve inches apart, so that the scratcher had the amount of travel of about twelve inches, minus the width of the collar of the scratcher, and were all free to turn and to slide, and I mean "rotate" when I say "turn."

Q.122: So that the only way that these scratchers were supported on the casing at this Kelly Well was due to the fact that they were slid over the end of the casing; is that correct?

A. Well, I don't understand your question, Mr. Lyon.

Mr. Lyon: Just read it.

(Question read by the reporter.)

(Deposition of Kenneth A. Wright.)

The Witness: Well——

Q.123: (By Mr. Lyon): If it is not correct, state where it is incorrect.

A. Slid over the end of the casing is indeterminate. You have got to do something else beyond that [2644-28] or they will fall off.

Q.124: All right, what else did you have to do?

A. The rows of beads were formed on the casing by the welder above and below each scratcher approximately twelve inches apart, and in no manner whatsoever connected to the scratcher. I am speaking of the beads.

Q.125: What joint of the casing in this particular well were the scratchers mounted upon, do you recall, joint or joints?

A. According to my present recollection these scratchers were, several were put on the shoe joint, which means the first joint going in the hole, and subsequently becomes the bottom joint of the string, and then they were positioned on joints above that at places indicated by the electric log where subsequent perforation might take place in the event they wanted to produce the well from those levels, and I mean by this there were one or more oil sands above the one which was to be the initial producer.

Q.126: And how far apart were the scratchers positioned, do you recall?

A. I think, my recollection is five or six feet.

Q.127: Now, was this casing subsequently run in the hole?

(Deposition of Kenneth A. Wright.)

A. Yes, this casing was run into, this [2644-29] 6 $\frac{5}{8}$ -inch was run into this well, McMillan Community No. 1, with the scratchers on it.

Q.128: When, in the series of running the entire casing in the hole, were the joints run in the hole that carried the scratchers?

A. I don't quite understand.

Q.129: Were they run in first or last?

A. They were run in first, starting at the shoe joint, and then in numerical sequence, and by that I do not mean that the second joint had scratchers on it. It might have been joints 3, 4, or 5, or some combination of that nature.

Q.130: That is, they were sent to the bottom of the hole, then? A. That is correct.

Q.131: Do you recall the depth of the hole?

A. I have heard the testimony here, so I am familiar with the exact depth, but I knew it was roughly 7,500 feet. I mean by that, the depth at which the casing was run.

Q.132: Were you present when the pipe was run in the hole?

A. I was present from the start of the operation of running the casing until the cementation was completed. [2644-30]

Q.133: For how long a period of time was that, Mr. Wright?

A. My recollection is the afternoon tour on December 30 until about mid-tour of the afternoon tour on December 31.

Q.134: How many hours would that be?

(Deposition of Kenneth A. Wright.)

A. Which would make about twenty-four hours running.

Q.135: You mean you were continuously present there for the entire 24-hour period?

A. Well, if being absent is laying down in your car or sitting on what we call the lazy bench, I was at the rig at that time.

Q.136: Why did you stay at the rig?

A. Well, this was a very critical operation in the fortunes of B & W, and a project of my own personal invention, and I considered myself the most, the party at interest most, the most party at interest, as they call it. The success or the failure of the outcome affected me personally in a very substantial amount.

Q.137: Now, what was the form of the scratcher used, I mean that was sold to Thomas Kelly & Sons, and which you instructed the mounting of, as you have testified?

A. Well, it is a modification of this form used and pictured in Exhibit I of the Jones [2644-31] report.

Q.138: We have a number of scratchers here in this room. Is that scratcher exemplified by any scratcher here in the room?

A. There has been one offered in evidence here which——

Q.139: Will you pick out just which one that is?

A. The devices used on the 65/8-inch casing on the Kelly Well are, to my best recollection, just like Petitioner's Exhibit A.

(Deposition of Kenneth A. Wright.)

Q.140: There are also exhibits in this room. Are there any exhibits here which are like the scratcher shown in Exhibit I, Figure 26 of the Jones report? If there are, will you pick those out.

You have produced two scratchers here. What are their exhibit numbers?

A. May I interrupt? Did I correctly understand?

(Record read by the reporter.)

The Witness: These are, to my best recollection and observation, identical to Figure 26 or Exhibit I, with the limitation that the wire on one device has a smaller diameter than the one on the other, and they are known as Petitioner's Exhibit M, with the wire which is of greater diameter——

Q.141: And the other exhibit is what?

A. Petitioner's Exhibit KKK, as the wires with [2644-32] the smaller diameter.

Q.142: You have a recollection of the scratcher which was used by Jones and Berdine and shown in Exhibit I, do you?      A. Yes, I do.

Q.143: Of the Exhibits M and KKK what is your recollection as to which one shows the correct wire?

A. It is my recollection that Petitioner's Exhibit M has the wire diameter that we used.

Q.144: That is the larger wire diameter?

A. The larger wire diameter.

Q.145: State whether or not you were instrumental in the forming of the scratcher which is

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shown in Exhibit I of the Jones and Berdine report?      A. I am.

Q.146: You selected the wire, did you, at that time?

A. That is my recollection, I did.

Q.147: And it is your construction and design, the manner in which the wires are held on the collar by clips, is it?

A. That is my construction or direction, whichever is the proper word here—invention might be used, if it is a correct application of the word.

Q.148: Now, was there any instrumentality developed by you for forming these wires at the time the scratcher [2644-33] of Exhibit I was formed?

A. This bend which occurs, which I will describe as the first bend from the outer end, starting with the outer end of the wire, and approaching the body of the device, that particular bend was done out at the location where this operation took place.

Q.149: That is, at the Dominguez Hill operation?

A. Yes, those bends were put in the wire out there.

Q.150: Who put those bends in the wire out there?

A. I put some of them in and I believe Mr. Berdine put some in after the pattern was showed him.

Q.151: What do you mean by "the pattern was showed him?" Who showed it to him?

A. I did. I think he did some while I was doing the other.

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Q.152: You recall this precise scratcher of Exhibit I, and the placing of these particular bends in the wire; is that correct?

A. That is correct, although there was another workman there. I don't remember whether he might have bent one or two of the wires.

Q.153: How many of these scratchers did you so bend?

A. Only two, according to my recollection, were made [2644-34] in this form, Petitioner's Exhibit M.

Q.154: State whether or not, according to your recollection, Exhibit M correctly illustrates the precise manner in which the wires were bent at that time?

A. It is my belief that this device, Exhibit M, and also Petitioner's Exhibit KKK are true replicas of the device shown in Exhibit I, and that means in every detail.

Q.155: I note in Exhibits M and KKK that there are balls on the ends of the wires. What are those?

A. Which do you refer to, the Exhibit M or the——

Q.156: I said there are balls on the ends of the wires, what are they?

A. There are balls on the ends of the wires of Petitioner's Exhibit M and Petitioner's Exhibit KKK, and also there are portrayals of balls on the end of those portrayed in Figure 26, Exhibit I, and the balls on the end of the two devices just



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mentioned are an effort to truly reproduce the device shown on Exhibit I.

Q.157: Do you have any knowledge of the formation of those balls on the end of the wires in the scratcher of Exhibit I?

A. My recollection is that that was done after I left, but with the understanding that it would be done, [2644-35] so as to prevent the cutting of the canvas.

Q.158: Did you have any understanding at that time as to how it was to be done?

A. The welder, according to my memory, would touch it with some particular rod or brazing rod, I don't remember which, so that no damage would be done to the spring steel structure.

Q.159: These two scratchers like Exhibit M then were formed, the wires bent while you were present at the Dominguez Hill location, and in the company of Mr. Berdine? That is as I understand your testimony.

A. That is my recollection at this time.

Q.160: Were you present and did you observe any running of these scratchers in the hole, I mean the simulated well?

A. No, I didn't actually witness these running in the hole, because that expression does not fit exactly what took place, Mr. Lyon.

Q.161: All right, were you present when a test operation was conducted?

A. If I may enlarge a bit, these devices were,

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according to my memory, assembled on the ground in proper sequence and then hoisted into place.

Q.162: All right, how were they assembled on the ground, then? [2644-36]

A. Well, a steel shell, which is described in the Jones paper, was on the ground. The canvas bag was inserted, or the opposite might have taken place. I don't remember whether they put the shell around the canvas or shoved it down in there, and then the casing with the devices on it was pushed into the simulated well and the apparatus all assembled and then raised into position, and finally came into the position like those shown in an earlier photograph which was introduced here. That is the way some of them were done, according to my understanding, although I did not see all of them by any means.

Q.163: You saw this operation, as you have testified, performed, however? A. Yes.

Q.164: Now, let's go back to this Kelly Well. We had, I believe, got the first few joints of casing lowered into the hole with the scratchers on those joints and, as I understand it, you continued to stay at the well during the time the casing was lowered. Do you recall anything that occurred during the lowering of that casing in the well?

A. Yes, I do.

Q.165: What?

A. Some time not too long after the scratcher-mounted casing was lowered into the well to the depth [2644-37] below the surface casing the cir-

(Deposition of Kenneth A. Wright.)

ulation returns coming out of the overflow started diminishing, and as more and more casing was put in, why, it became observed that no returns at all or overflow occurred at each time a joint of casing was lowered into the well, and after more casing was—this occurring of no returns persisted, and you could not determine the fluid level between the 7-inch—correction,  $6\frac{5}{8}$  casing and the annular space, or any annular space, and then the casing became slightly logy, as observed by the weight indicator, and it became increasingly logy until sometime on morning tour it was so logy that it was concluded that no more casing could be put in the well without resorting to circulation.

Q.166: Who made that determination?

A. It was decided by Mr. Kelly, but it was decided by first asking me: "Can we reciprocate and circulate with those scratchers on the casing?" and I said, "You can." So the circulation head was put in the  $6\frac{5}{8}$ -inch casing and the pumps started, and the rig pumps were not able to break circulation, although the casing was very close to being stuck, that is, but movement was able to be continued, so the Kellys and Mr. Sweetzer and myself concluded the thing to do was to——

Q.167: Was Mr. Sweetzer there at the time?

A. I believe Mr. Sweetzer was—decided that the [2644-38] only thing to do was to call for a cementing truck, which it is customary to have on it pumps which are capable of pumping at a much higher pressure than are normally found at the

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well. We were able to keep the casing free until the cement truck arrived and got it connected up, and with the aid of the pumps on the cementing truck we were able to obtain circulation and the casing became increasingly freer, during which time the reciprocation was carried on, and when this operation was determined to be completed, that is, that the well was in condition that more casing should be attempted to be put in, we went ahead with adding more joints and stopping to circulate the reciprocate, and the test, more or less, for decision was the weight indicator. And so we continued that program until the ultimate depth at which the well was cemented was arrived at.

Q.168: Do you recall how many times you had to stop and recirculate?

A. No, I don't know exactly, but I have a vague idea it would be—not vague idea, I have some ideas on it.

Q.169: What are your ideas?

A. Probably five or six times.

Q.170: Was the casing ultimately lowered to the desired depth in the well? [2644-39]

A. The casing was lowered to a depth just a few feet short of where they had originally intended to cement it, and I don't remember whether that was five feet or approximately that amount of footage.

Q.171: Mr. Wright, did you at any time publish an instruction sheet with reference to the mounting of these scratchers on the casing?

(Deposition of Kenneth A. Wright.)

A. Yes, we did.

Q.172: I hand you Exhibit B and ask you if that is the instruction sheet to which you have just referred?

A. This is a copy of the instruction sheet. This particular paper, I recognize this as being a second or third run of those instruction sheets.

Q.173: When were these instruction sheets gotten out by your company, if they were?

A. I believe they were available for distribution in the latter part of January.

Q.174: Of what year?

A. Of 1940, although it might have been the first part of February.

Q.175: This instruction sheet, Exhibit D, nowhere states what the ultimate result of the mounting will be. Why? [2644-40]

\* \* \*

The Witness: Well, in the first place, this device is used on casing, and I mean by that casing used in oil wells. The casing is round, that is, within the limits of manufacturing tolerances which have been established and known and used for many, many years prior to this instruction sheet having been printed or blueprinted. The illustrations, both left and right, as well as the text shows how the devices are to be positioned on the casing and what retains them at those particular locations on the casing. This instruction sheet says: "Build beads," 4 beads to be exact, "around the circumference of the cas-

(Deposition of Kenneth A. Wright.)

ing," and they have the beads, according to this instruction sheet, a total distance of 14 inches apart. It says build the beads to have a square shoulder. The draftsman indicates a square shoulder, and the text says that the device stands still while one foot of travel of the casing takes place, and that means while the casing and guide are being run into the well, because it refers to drillers, who would be the people who would run the casing in the ground, so the device is indicated to be a round collar [2644-41] device. The casing in the industry has a tolerance for diameters of three-quarters of one per cent for most all sizes, and that is on a plus or minus basis, meaning that if a casing were to be ten inches, for example, the maximum diameter could be 1/10th of an inch above, and the normal would be 10 inches, and the minimum diameter would be 1/10th of an inch below 10 inches. I am using an illustration which, in that case, would be a tolerance between the largest diameter and the smallest diameter of 2/10ths of an inch, or almost a quarter of an inch, so that actually between those beads positioned 14 inches apart that diameter could be, if the casing were 10 inches in the illustration I am using, a difference of diameter outside of 2/10ths of an inch. I do not wish to infer that 10-inch casing is used in the industry because I don't know its normal— $10\frac{3}{4}$  or  $9\frac{5}{8}$ , in that range of sizes—so there is the device, round, mounted on a casing that is round, that will slide up and down and free in all other respects of the casing, and then

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if we combine all that with the word "reverses" up here, and the exact points when the wires engage the wall of the hole in a different direction after each reversal, or coincidental with each reversal, the rotation of the device and the evidence that is meant and shown to be rotatably mounted and does rotate, is all there to people who wish to examine it for what it says. [2644-42]

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Q.176: (By Mr. Lyon): To whom were the instruction sheets like Petitioner's B distributed, Mr. Wright?

A. Those instruction sheets were given out to the welders and engineers at the time a delivery of equipment was made to a well or warehouse.

Q.177: Who got up this instruction sheet, Exhibit B? A. Mr. Barkis, I believe.

Q.178: When? A. Early in January, 1940.

Q.179: How does this illustration on this instruction sheet compare with the manner of mounting the scratchers on a casing at the Kelly Well?

A. This example shown on the lower right-hand portion of Petitioner's Exhibit B is identical with the manner in which the scratchers were mounted on the Kelly Well.

Q.180: Was this Exhibit B the first [2644-43] piece of literature gotten out by your corporation?

A. That is according to my present recollection.

Q.181: What was the next piece of literature gotten out by your corporation?



(Deposition of Kenneth A. Wright.)

A. Bulletin No. 101 was the next literature.

Q.182: That is Exhibit A?

A. This is the next piece of advertising or literature put out by B & W.

Q.183: Do you have any independent recollection as to when the Bulletin No. 101 was circulated by B & W?

A. Bulletin No. 101 was circulated in the early part of March, 1940.

Q.184: You stated that you were present at the API meeting on March 19, 1940, at which Mr. Jones delivered his paper. When, with respect to that, was Bulletin No. 101 circulated?

A. Just a few days prior to the address of Mr. Jones on that date.

Q.185: How many of them were sent out at that time, do you recall?

A. No, I don't remember exactly how many.

Q.186: Were there 5, 10, a hundred, 200, or what?

A. My present recollection is that there would have been—that there was 250.

Q.187: To whom were they sent? [2644-44]

A. To the oil field operators, that is, I mean by that the employees of oil-producing companies here in California.

Q.188: What type of employees?

A. Such as engineers, drilling superintendents, foremen, and superintendents, to people which are directly associated with the drilling of the well.



(Deposition of Kenneth A. Wright.)

Q.189: (By Mr. Lyon): Do you recall any incident that occurred at the API meeting at the Biltmore Hotel on March 19, 1940, which would enable you to establish any one person who received a copy of this Bulletin 101?

Mr. Scofield: We will stipulate that A. H. Bell did.

The Witness: I was going to——

Mr. Lyon: I will accept the stipulation.

Q.190: After Bulletin 101 was published and distributed, what was the next piece of literature or advertising material published by your corporation?

A. The next advertising literature sent out by B & W was a blue on white publication which was presented in evidence here this morning, and I will read the title if you—— [2644-45]

Q.191: Exhibit what?

A. Petitioner's Exhibit WWW.

Q.192: After that what was the next piece of literature published by B & W?

A. Bulletin 102 was the next bulletin published.

Q.193: And that is exhibit what?

A. Applicant's Exhibit 7. At this time I am disregarding any magazine advertising which might have appeared, and I do not know of any at that time, but I am talking about bulletins like this when I answer your question.

Q.194: After Bulletin 102, Applicant's Exhibit 7, what was the next advertising material published by B & W, other than possibly magazine advertisements? Was it the B & W Bulletin 104?

(Deposition of Kenneth A. Wright.)

A. Bulletin 104 was the next bulletin published.

Mr. Lyon: Bulletin 104 is Applicant's Exhibit 8.

The Witness: What is the question?

Mr. Lyon: There isn't any question.

Q.195: I hand you, Mr. Wright, Petitioner's Exhibit YYY, and I will ask you if you can relate what you know about the exhibit and to whom it was presented, when, and under what circumstances?

A. This device, Petitioner's Exhibit YYY, is one of some scratchers that I had manufactured according [2644-46] to my instructions about June, 1947, and the manufacture of this device, and I mean by that this particular identical type of device, was brought about by a conference between four individuals of Gulf Research & Development Association and myself and Mr. Barkis.

Q.196: Who were those four individuals?

A. Dr. Wescott, Mr. Vollmer, Mr. A. J. Teplitz, and Mr. Kennedy, Dr. Kennedy, I believe. The conference——

Q.197: Where did this conference take place?

A. The conference took place in one of the buildings of the Research Department of the Gulf Research & Development Corporation at Harmarville, Pennsylvania.

Q.198: You have named who was present?

A. Yes.

Q.199: When?

A. My recollection is that this conference took place in mid-June, 1947.

Q.200: Will you state as nearly as you can the

(Deposition of Kenneth A. Wright.)

conversation that was had at that time and place?

A. Well——

Q.201: Are you unable to give the precise conversation?

A. I am not able to give the precise conversation but my recollection of the substance of it was that the Gulf Company preferred a device with a coil spring [2644-47] base—strike “base”—with a coil spring wire, and were interested in procuring more than one source as a supply, although they stated they were not the purchaser or related to the purchasing department, and we stated—I stated to the Gulf Research men present that as of that time we were of the opinion that we could make a device of that nature because of certain incidents which had taken place prior. I mean by that their present supplier had stopped paying royalties and had been placed on notice of infringement, and we were legally permitted to make a device of that nature.

\* \* \*

Q.202: (By Mr. Lyon): Had you been advised by anyone with respect to the statements which you made in your preceding answer, Mr. Wright?

A. I had been advised.

Q.203: By whom?

A. By Mr. William Maxwell, a patent solicitor.

Mr. Lyon: Will you read the answer, Mac, before we get any further along, that he objected to?

(Answer read as requested.)

(Deposition of Kenneth A. Wright.)

Q.204: (By Mr. Lyon): State whether or not it was stated at that time that the Gulf wanted a coil spring scratcher?

A. I believe I have just stated that in [2644-48] my answer, Mr. Lyon, that the Gulf Oil Company at that time desired a coil spring type scratcher.

Q.205: As a result of that conference did you agree to submit to the Gulf a coil spring scratcher?

A. It is my recollection that I stated we would submit a scratcher to them.

Q.206: Did you submit a coil spring scratcher to them in accordance with that agreement?

Mr. Scofield: We will stipulate to that.

The Witness: Upon my return to Los Angeles from this conference in Pittsburgh, at Harmarville, I had constructed two, my recollection is 5½ inch scratchers, and sent them to the Gulf Research & Developing Corporation, to either Mr. Wescott, to Dr. Wescott or Vollmer, I do not recall which.

Q.207: When?

A. I believe the letter is dated June 30, 1947.

Mr. Scofield: We will stipulate that.

Q.208: (By Mr. Lyon): Did you receive any response to the submission of this coil spring scratcher to the Gulf Company?

Mr. Scofield: Again it can be stipulated he got an answer, and if the letter is furnished I will stipulate to the letter.

The Witness: I do not remember the [2644-49] question.

(Question read by the reporter.)

(Deposition of Kenneth A. Wright.)

The Witness: I received a letter recognizing—strike “recognizing”—I received a letter which stated that the devices had been received.

Q.209: (By Mr. Lyon): Did you ever receive any other communication from the Gulf Company, any other communication of any kind from the Gulf Company, with respect to these coil type scratchers?

A. I do not recollect any other correspondence originating with them, except in response to a letter by me.

Q.210: Did you at any time communicate with the Gulf Company by letter with reference to these particular scratchers that you forwarded to them, as you state, with your letter of June 30, 1947?

A. Yes, I wrote to them again.

Q.211: When?

A. My present recollection is late in 1948, and I believe it is October or November.

Mr. Scofield: We will stipulate that the scratchers were returned.

Q.212: (By Mr. Lyon): What was the purpose of that letter?

A. The purpose of the letter was to determine if anything had ever been done with the scratchers in the way of testing, or what had become of them, were they still in their possession. [2644-50]

Q.213: In response to that letter did you receive the scratchers back?

A. I did receive the two scratchers back.

Q.214: Did you receive any other communication?

(Deposition of Kenneth A. Wright.)

A. I don't recollect at this time a letter.

Q.215: Did you or B & W ever sell a scratcher of this coil type like Exhibit YYY?

A. Not a single one was ever sold of this identical design which is standing, setting before me, and I wish to make a comment that I am not in any manner referring to our model known as a Nu-coil scratcher.

Q.216: This scratcher differentiates from the Nu-coil scratcher in one of many respects, the one being, for the purpose of identification in this case, the wires are mounted on studs on the inside of the collar; is that correct?

Mr. Scofield: Who is testifying?

Q.217: (By Mr. Lyon): Is that correct?

A. That is correct.

Mr. Scofield: I object to the statement of counsel.

Q.218: (By Mr. Lyon): And that is not true of this Nu-coil scratcher? A. That is correct.

Q.219: So that I would be correct in referring to this coil scratcher as a coil spring with an inside stud mounting; is that correct? [2644-51]

A. That is correct, "this" being Petitioner's Exhibit YYY.

Q.220: Did you at any time before these scratchers like Exhibit YYY were returned to you have any conversation with any party in the Gulf Company with respect to the scratchers which you forwarded to them, as you have stated, with your letter of June 30, 1947?

(Deposition of Kenneth A. Wright.)

A. Will you please read that question slowly?

(Question read by the reporter.)

The Witness: I did.

Q.221: (By Mr. Lyon): Where?

A. In Pittsburgh, Pennsylvania.

Q.222: Who was present?

A. Mr. A. M. Houghton, who I believe was patent counsel, Mister——

Q.223: Patent counsel for the Gulf Company?

A. For the Gulf Companies; Mr. Leslie Vollmer and Dr. Wescott, and with me was an attorney named J. Harold Decker.

Q.224: Where did this meeting take place?

A. In the Gulf Oil Company law library in the Gulf Building, Pittsburgh, Texas—Pittsburgh, Pennsylvania.

Q.225: When?

A. My recollection of the date of this conference is it took place on September 8th and 9th [2644-52] of 1947.

Q.226: What was said, giving me the substance of the conversation had by all parties as near as possible, unless you can state the precise conversation.

A. I cannot state the precise conversation, but according to my present recollection the substance of it was we wished to obtain some of the Gulf business, and wanted them to make purchases of our device called the wall-cleaning guide, and we



(Deposition of Kenneth A. Wright.)

wished to have a conference with them about the status of relationships, if any, with J. E. Hall, from whom they were then purchasing scratchers, and related things of that nature. During the first day's conference I asked them if they were interested in purchasing the type of scratcher which I had forwarded to them in June of 1947, and I stated, or Mr. Decker stated, I don't recall, that we were of the opinion we could make that device legally, and would make and supply them if they would give us any orders.

Q.227: And what was said?

A. Well, Mr. Houghton asked for some statement, some information about the contract and the applications that Hall might be the possessor of, and I stated that we were of the opinion the pending applications were invalid, by reason of devices he had had on sale and in public use for two or three or more years prior to his making that application, and that he had abandoned the [2644-53] applications that were in the contract without notice to B & W, and ceased paying royalties, and that the combination of all or a part of this permitted us to offer them that device. Mr. Houghton stated that—again that—strike “again.” Mr. Houghton stated that the Gulf Company was always interested in having more than one supplier, and also interested in establishing that the suppliers could meet the fluctuating demand of the companies, and further asked me at what price we would supply the devices.

(Telephone rings. Discussion off the record.)



(Deposition of Kenneth A. Wright.)

Q.228: Did you finish your answer?

A. I had not, if you mean by your question to indicate all that happened in the two days.

Q.229: No, I mean on that day, I mean the complete conversation of that day. I will get to the next day later.

A. That is substantially all that I can remember at this time.

Q.230: Was there any indication given to you at that time and place or to you and Mr. Decker as to whether or not the Gulf Company would or would not purchase scratchers from B & W?

A. It was my understanding when the conference closed on that day that the Gulf Companies were interested [2644-54] in purchasing devices similar to the two which had been forwarded, and again approximately, according to my understanding, they were going to do it.

Q.231: Now, Mr. Wright, have you testified—

A. Correction, that he would make recommendations that the purchasing department could do so.

Q.232: Now, it is my understanding that you have related the conversation in substance that was had on this first day. Have you stated what you said at that conversation or what Mr. Decker said or what anybody else said, and I mean by that did you relate any of this conversation as being said by any particular party?

A. I gave a condensed statement of what my recollections were of what was said at the time by the various parties.

(Deposition of Kenneth A. Wright.)

Q.233: Were these statements with respect to the legal position, your legal position, stated by you or by Mr. Decker?

A. Mr. Decker was the person who made all the statements regarding the legal positions.

Q.234: I presume then if you were satisfied, and I believe you stated that you were, they said that they were going to recommend that they purchase these scratchers from you that this particular conference then broke up; is that correct? [2644-55]

A. That is correct.

Q.236: Was there any understanding that you would have a further meeting after that conference broke up on that day?

A. We arranged to have a further conference on the day following.

Q.237: On the day following did you have a further conference? A. Yes, we did.

Q.238: Who was present at this further conference?

A. It is my recollection that Dr. Wescott left either the afternoon before or early the next morning, I cannot recollect.

Q.239: All right, who was present?

A. So the parties present on the day following were Mr. Houghton, Mr. Vollmer, Mr. Decker, and myself.

Q.240: Where did this conference take place?

A. In the law library of the—in the same room as we had had the conference the day before.

(Deposition of Kenneth A. Wright.)

Q.241: What was the date of this second conference?

A. My recollection is September 9, 1947.

Q.242: All right. What was said at this conference, giving as nearly as you can the precise conversation had by everyone present, and if not, give me the substance, where you cannot do that give me the substance of the [2644-56] conversation.

A. I cannot give the precise statements of any of the parties, but my recollection of the substance of it is that on this Tuesday morning, September 9, 1947, Mr. Houghton asked Mr. Decker several questions about the contract with Hall and related matter, and this took thirty minutes or more, and might have been as much as one hour, and then Mr. Houghton stated that he had contacted Mr. Thomas E. Scofield, the attorney for Hall, between the close of the conference the day before and at the present moment, and that he had told Mr. Scofield we were there, that is, B & W were there, in the form of Wright and Decker, and was offering to supply them with a coil spring scratcher, and that Mr. Decker had stated that——

Q.243: Mister who had stated?

A. Mr. Decker had stated that B & W had a right to make that scratcher and offer it to Gulf, and the reason, some of the reasons which Mr. Decker had stated were the invalidity of the Hall applications then pending, or at least understood to be pending, and for various other reasons which he gave, and Mr. Houghton stated that Mr. Scofield had

(Deposition of Kenneth A. Wright.)

told him that he was going to obtain claims in the second application, or the one then pending, which were broad enough to read on the first application, and if they—and therefore, they had the exclusive right [2644-57] to make that device, and Mr. Houghton stated because of the statements of Mr. Scofield he was going to change his opinion from what he had stated the day before, and was not interested in purchasing any of those devices from us.

Q.244: State whether or not Mr. Houghton at that time stated to you that he described the scratcher which you were offering to them to Mr. Scofield in his contact with him that was had between these two conferences.

A. Well, all of the statements regarding the scratcher that was being discussed were the two which were then in the possession of Gulf Research & Development Corporation, and were continually described as the coil spring scratchers similar to Hall's.

Q.245: Now, did Mr. Houghton tell you at that time how he contacted Mr. Scofield?

A. He said he had telephoned him.

Q.246: Did Mr. Houghton state at that conference that he had told Mr. Scofield he would not recommend that Gulf purchase these scratchers from you?

A. Repeat that question.

(Question read by reporter.)

(Deposition of Kenneth A. Wright.)

The Witness: I do not recollect Mr. Houghton making that statement.

Q.247: (By Mr. Lyon): Now, were any other conversations had other than you have stated at any time with respect to [2644-58] the Gulf purchasing scratchers like Exhibit YYY?

A. Mr. Houghton stated to Mr. Decker that he had not now—he refused or rejected any idea of making any recommendations about it, strike that. Mr. Houghton said that in view of the liability which Gulf might incur he was not going to permit them to purchase at that time any scratchers like the two which we had submitted, but he said to Mr. Decker, “If you can convince me that the applications of Mr. Hall are defective in the manner you assert or state, why, I will be interested in carrying on the investigation with you.”

Q.248: Did Mr. Houghton at any time ever change his expressed opinion to you?

A. Regarding what?

Q.249: Regarding the recommendation that Gulf purchase scratchers like Exhibit YYY from B & W?

A. As far as I know, that closed the incident, as far as their purchasing a device identical to Petitioner's Exhibit YYY.

Q.250: Did B & W any time after that attempt to manufacture or manufacture any other scratchers like Exhibit YYY?

A. As far as—read that question.

(Question read by the reporter.)

(Deposition of Kenneth A. Wright.)

The Witness: B & W then—no, we did [2644-59] not.

Q.251: (By Mr. Lyon): All right, did B & W at any time after that offer any scratchers like Exhibit YYY for sale to anyone?

A. Not according to my present recollection.

Q.252: Were scratchers like Exhibit YYY offered to the Gulf Company at any time after this conference in September of 1947?

A. Not to my knowledge.

Q.253: Were scratchers like Exhibit YYY on sale or offered for sale on August 15, 1948?

A. Not according to my knowledge.

Q.254: What scratchers were B & W offering to the trade on August 15, 1948?

A. The wall-cleaning guide and the scratcher which we called the Multi-Flex scratcher.

Q.255: When did you first offer for sale that Multi-Flex scratcher?

A. My present recollection is September or October, 1947.

Q.256: To whom did you first offer it?

A. Well, I don't have—six of these Multi-Flex scratchers were sent to Gulf Research about October 10, I believe, 1947. There is a letter in evidence, I believe, somewhere, relating to that.

Q.257: Was that the first offering that you can now [2644-60] recall?

A. No, I believe there was one a little bit earlier, but I cannot recollect that at this moment.

Q.258: Did you have any conversation with any

(Deposition of Kenneth A. Wright.)

other people in the Gulf with respect to the Multi-Flex scratcher?

A. At the conference Mr. Barkis and myself had with Gulf in July—pardon me, in June of 1947, we showed them samples of the Multi-Flex finger.

Q.259: And by “the Multi-Flex finger” you mean a finger like the finger which I hand to you?

A. That is correct.

Q.260: Is that a Multi-Flex finger that I handed you?

A. That is what we call a Multi-Flex finger.

Mr. Lyon: I will offer the Multi-Flex finger in evidence as Petitioner’s Exhibit 4B.

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Q.261 (By Mr. Lyon): What was stated at this conference attended by yourself and Mr. Barkis with reference to the Multi-Flex scratcher? [2644-61]

Mr. Scofield: This is the conference now in June, 1947?

Mr. Lyon: That is right.

The Witness: The Gulf Oil Company, correction, the Gulf Research & Developing Company men present at that conference were interested in this device, and indicated they would like to make some tests with it.

Q.262 (By Mr. Lyon): Then as I understand it, your next move was to send them six of these devices about October 10th of 1947, as far as Gulf is concerned?

A. I do not recollect that me made a positive



(Deposition of Kenneth A. Wright.)

statement when we would send them, but I think—then we sent them in October.

Q.263: Did you hear any further from these devices you sent to them in October from the Gulf?

A. The substance of what followed was they made an arrangement for testing these devices other than in the laboratory, and within a short time thereafter enough of them were purchased to make tests on a field—on a well where casing was cemented, and used these devices.

Q.264: Did you learn at any time that the fact that you had submitted these Multi-Flex scratchers to the Gulf Company was transmitted to Mr. Hall, Sr.?

A. Repeat the question.

(Question read by the reporter.)

A. I did. [2644-62]

Q.265: Did you learn whether or not Mr. Hall protested the Gulf's testing or use of the Multi-Flex scratcher?

Mr. Scofield: We will stipulate that.

Mr. Lyon: Will you stipulate that that was on or about December of 1947?

Mr. Scofield: I won't say the date, but it was whenever we heard about it. We will stipulate we protested.

Mr. Lyon: Do you recall the letter? Can we stipulate you protested about December 12, 1947?

Mr. Scofield: I don't recall what date it occurred. I said we will stipulate we protested imme-



(Deposition of Kenneth A. Wright.)

diately we heard about it, if there is a letter in here that will fix the date.

Mr. Lyon: Will you stipulate you heard about it shortly after the Multi-Flexes were sent to the Gulf Company?

Mr. Scofield: Hall tells me he did, so we will stipulate to it. I didn't know about it, I don't think, but we are ready to stipulate it.

Mr. Lyon: Well, I would like to offer at this time in connection with that stipulation a letter of Dr. Foote to Mr. Houghton of December, 1947——

The Witness: 5th is my recollection.

Mr. Lyon: ——copy of which I do not have immediately [2644-63] available, and I think I will call a recess at this time until tomorrow morning at 10:00 o'clock, and I will present that letter at that time. [2644-64]

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Q.266: Mr. Wright, when you started in the development of your scratcher business did you contact a patent attorney? A. I did.

Q.267: Who was that patent attorney?

A. James Abbett, of Los Angeles, California.

Q.268: Where was he located?

A. In the Roosevelt Building on Seventh Street in Los Angeles.

Q.269: When did you first contact Mr. Abbett?

A. My recollection is April or May of 1939.

Q.270: Was that before you had made [2644-66] arrangements with Mr. Barkis for the formulation of B & W?

(Deposition of Kenneth A. Wright.)

A. Well, it was simultaneously with the earlier, earliest of the discussions.

Q.271: Did Mr. Barkis accompany you on the first time you visited Mr. Abbett?

A. No, he did not.

Q.272: You were aware, or did you learn that James Abbett was a patent attorney, and not a patent lawyer?

A. I don't think I knew the difference at that time.

Q.273: Did you learn that later?

A. I did.

Q.274: Did you have a conversation with Mr. Abbett in his office either in April or May of 1939 and, if so, what was the substance of that conversation?

A. I disclosed to him what I thought to be an invention relating to putting abrading devices on casing and abrading the well wall of the hole during circulation with various types of fluids.

Mr. Lyon: May the record show, and may it be stipulated, Mr. Scofield, that Mr. James M. Abbett, the patent attorney, is now dead? He is.

Mr. Scofield: I don't know anything about it, but if you say he is, why, I will accept it.

Mr. Lyon: All right, continue your conversation, I mean [2644-67] your relation of what happened, Mr. Wright.

A. Mr. Abbett said he would be—accept the employment, or whatever the proper term might be, to procure a patent involving those disclosures, and

(Deposition of Kenneth A. Wright.)

that this would be, in his opinion, a method patent, and that the abrading devices would undoubtedly take more than one form, and I had already stated that to him, so there would be no doubt about it. So he advised the thing to do would be to prepare the thing in very broad coverage approach, and provide illustrations which were schematic and not specific, except in the barest of essential details.

Q.275: As a result of that first conference that you had with Mr. Abbett did he prepare at any time an application for a patent for you?

A. He did.

Q.276: Was that application filed in the Patent Office? A. It was.

Q.277: Which of the applications was that, Mr. Wright?

A. That becomes the first one of this series, I don't remember the number.

Q.278: I put before you what I believe to be the first one of this series, and which is found in the Wright Patent No. 2338372, and will ask you if that is the application [2644-68] you just had reference to? A. The number is 2338372.

Q.279: The application for that patent was not filed in the Patent Office, as shown by the record of the patent, until August 19th of 1939. Can you account for the delay in the filing of that application from April or May until August, Mr. Wright?

A. Nothing other than that was the normal manner in which he prepared things which were requested of him.

(Deposition of Kenneth A. Wright.)

Q.280: After this conference in April or May did you have any further conference with Mr. Abbett before the application was filed in the Patent Office on August 19, 1939?

A. Yes, I read the application before it was sent on to the Patent Office, and asked him questions.

Q.281: When was this?

A. This would be, in my estimation, late July and after reading it made suggestions and we requested advice from him as to what the wording should be of the patent application, and accepted his advice, and with a very few correction it was——

Q.282: Were the suggestions you made embodied in the application that you signed, and I presume you signed it at that time, Mr. Wright?

A. I signed it after the draft was [2644-69] corrected with these few changes, as I recall it.

Q.283: Were the suggestions that you made embodied in the application before you signed it?

A. Very few, if any. He said he wanted to provide a very broad coverage and did not want to put in a lot of limiting requirements.

Q.284: What were the suggestions that you made?

A. Well, the definition of "fluid."

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The Witness: The principal one was the definition of the meaning of the word "fluid," and he

(Deposition of Kenneth A. Wright.)

said in his opinion that was the proper word to apply.

Q.285: (By Mr. Lyon): What suggestion did you have with reference to the word "fluid"?

A. Well, I wanted to be sure that "fluid" included all things which could ever be contested as a fluid, including the word "cement," which he recommended [2644-70] be left out.

Q.286: And the word "cement" was left out of the application on his recommendation?

A. That is right.

Q.287: Were there any other suggestions that you made?

A. The question was brought up again about these schematic illustrations, and he assured me that was the correct and most—the correct way to present the application to the Patent Office, because it was a method.

Q.288: What question did you have about the schematic showing? Did you have any suggestion as to any specific showing to be made at that time?

A. I think, my recollection is I told him that we had or I had a progress towards a specific device, and he said that that should be taken care of by subsequent application.

Q.289: Did you have that specific device there at that time of this conference?           A. No.

\* \* \*

The Witness: No, I did not.

(Deposition of Kenneth A. Wright.)

Q.290: (By Mr. Lyon): In your use of the word "cement" what did you mean by the word "cement"?

A. I mean a cement slurry which is, according [2644-71] to my definition, a viscous fluid, first a fluid and then subsequently viscous.

Q.291: After the application for the Patent No. 2338372 was filed did you have further conferences with Mr. Abbett?

A. I do not remember the date of the first response from the Patent Office on the one we have just mentioned, but in 1940, somewhere about September is my present recollection, I conferred with him again about the obtaining of a patent on a specific device to go with the method that had been applied for.

Q.292: That was, in your recollection, about September, 1940?

A. That is within a month of my present—what I am thinking of at this moment.

Q.293: Had you taken up the specific device with Mr. Abbett before that time? When was the first time you took it up with Mr. Abbett? [2644-72]

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Q.294: (By Mr. Lyon): Proceed with your statement, Mr. Wright.

The Witness: Will you please repeat the question?

(Question read by the reporter.)

The Witness: My present recollection is about

(Deposition of Kenneth A. Wright.)

September, 1940, and that is the first time that I interviewed Mr. Abbett about the specific device.

\* \* \*

Q.295: What did you take up with Mr. Abbett at that time?

A. I told him we had developed a device which—I, I mean, had developed a satisfactory commercial device, and wished him to obtain the type of patent applicable to that apparatus, and showed him a catalog and a device, [2644-73] and told him to prepare the application.

Q.296: You actually had the device there?

A. Yes, I gave him a device and a catalog.

Q.297: A device like what?

A. Well, very similar to that one illustrated in page 2 of this Bulletin 101. If you will permit me to have Bulletin 101 I will——

Q.298: All right.

A. The device which I gave Mr. Maxwell—strike “Maxwell”—Mr. Abbett at this time was very similar to that pictured in the cut on page 2 of Bulletin 101, which is Exhibit A, and the catalog was identical to Bulletin 101, Petitioner’s Exhibit E.

Q.299: With respect to the devices here in evidence what one of the devices, if any, is illustrative of the precise device which you gave or presented to Mr. Abbett at that time?

A. There is one here, which I believe is the one which Mr. Scofield presented.

(Deposition of Kenneth A. Wright.)

Q.300: Which one is it?

A. According to my present recollection, it was similar to Applicant's Exhibit 2 for identification.

Q.301: Do I understand you correctly to state that you also gave him some printed matter at that same time?

A. I stated I gave him a Bulletin 101. [2644-74]

Q.302: Did you give him anything else?

A. Not according to what I remember at this time.

Q.303: Did you refer him to the API paper given by Jones?

A. I do not recollect at this particular moment.

Q.304: You have no recollection one way or the other on that; is that correct?

A. No, I do not.

Q.305: Did you describe fully the structure of your scratcher as illustrated by the device like Applicant's Exhibit 2, as shown in your Bulletin 101 to Mr. Abbett at that time? A. I did.

Q.306: Were you alone at Mr. Abbett's place of business at that time? A. I was.

Q.307: Mr. Barkis was not with you?

A. No, he was not.

Q.308: Did you tell Mr. Abbett in that explanation how these scratchers were mounted on the casing? A. I did.

Q.309: Did you use anything to illustrate that explanation?

A. I used the Bulletin 101 was illustration



(Deposition of Kenneth A. Wright.)

for [2644-75] the manner in which they were applied to the casing.

Q.310: Just repeat what you told Mr. Abbett at that time with respect to the mounting of the scratchers on the casing?

A. I told Mr. Abbett that we had—strike “we”—I had concluded right from the start that these devices had to be free on the casing both slidably and rotatably, so that these small diameter wire ends could move or hunt a new position at each time the direction of the scratcher was changed, so that the entire circumference of the wall of the well at that point would be cleaned of the mud and filter cake.

Q.311: Did you make any other explanation to Mr. Abbett of the method by which the scratcher operated in the removal of the mud?

A. Yes, I told him the wire diameter had proved to be effective as a scratching device, and that it provided sufficient strength to move, rotate the collar on the casing between these two stops, and that the distance of the stops apart was related to the actual phenomena of the driller having to raise and lower the casing by this small amount when adding joint by joint the number required to make up the full string of casing.

Q.312: Mr. Wright, I presume that subsequent to this conference with Mr. Abbett an application draft [2644-76] was finally handed to you; is that correct?

A. That is correct.

Q.313: When?

(Deposition of Kenneth A. Wright.)

A. I would estimate late November, 1940.

Q.314: How come that it took so long? Do you have a knowledge of what was the cause of the delay?

A. Well, Mr. Abbett was a one-man office and accepted employment as an expert, if that is the correct word, for attorneys, and spent quite a bit of his time in that work, and, in addition he had his boy, as I remember it, do his drafting in the evenings. So, other than that, that is the way Mr. Abbett conducted his patent business.

Q.315: When this application was finally presented to you, how did it compare with the application that was subsequently filed, and I presume it was, in the Patent Office?

A. The form in which he presented—

\* \* \*

Q.316: (By Mr. Lyon): Do you have that draft, Mr. Wright? A. No, I do not.

Q.317: Do you know where it is?

A. No, I do not. [2644-77]

\* \* \*

Q.318: (By Mr. Lyon): Have you made an effort to obtain the files from Mr. Abbett's office?

A. I went there once about two or three years ago, I don't remember, and his files were very bare, and he was, I might say, barely alive with a heart case.

Mr. Scofield: What?

The Witness: Barely alive. The heart case was

(Deposition of Kenneth A. Wright.)

so severe he was barely alive, so I could not and was not able to obtain anything.

Q.319: (By Mr. Lyon): I asked you whether the application was filed in the Patent Office, and I presume that eventually was the application which resulted in the grant of your Patent 2374317; is that correct?

A. The application which was prepared by Mr. Abbett at that time was number—is now Patent No. 2374317.

Q.320: How did that application as it was prepared and presented to you for signature compare with the application which was filed?

\* \* \*

The Witness: The specifications and drawings which he had prepared had left out——

Q.321: (By Mr. Lyon): They had left out, but how did they compare with what is here?

A. Which he prepared and presented were almost identical to that found in this application to Patent [2644-78] 2374317.

Q.322: That is, there was no substantial change made in the application as he prepared it and that filed in the United States Patent Office; is that correct?      A. That is correct.

Q.323: When this application was presented to you, state whether or not you had any objection or made any suggestions for the change or alteration of the application to Mr. Abbett?

A. I told Mr. Abbett that there was no reference to this method of mounting and this device being

(Deposition of Kenneth A. Wright.)

free to rotate on the casing, as represented by the cut on page 2 of Bulletin 101.

Q.324: What did Mr. Abbett say to that?

A. He said he didn't think that was patentable material, and recommended that it be left out as being immaterial.

Q.325: I point out to you the specification in your patent states on page 2, column 2, lines 29 to 32, the following:

"It will be seen that each unit comprises an inner sleeve 14 secured on the casing 11, and around the circumference of which are mounted rings 15."

A. May I read that? Where did you read from?

Q.326: Line 29. [2644-79]

A. Yes, I remember that wording being present at the time, I remember that wording.

Q.327: Did you have any discussion with reference to that wording with Mr. Abbett at that time?

A. Yes, I did.

Q.328: What discussion did you have?

A. He said that the illustration as shown on Figure 2 with these lugs was a method of securing the device to the casing, and covered that idea as far as patentability would be permitted, and that was the termination of the investigation as to what the word "secured" might mean.

Q.329: Did you discuss with Mr. Abbett at that time any other form of scratcher than that shown specifically in the drawing of this application?

A. I am certain I told him about the Jones-Union Oil Company project, and showed him the

(Deposition of Kenneth A. Wright.)

paper, a copy of the paper of the Jones report and illustrations and the mounting between the rings, and he stated that what we had in my application was sufficient to provide coverage for all of that.

Q.330: Now, except for the application for the method patent which you have previously testified to, am I correct in assuming that this was your first experience with the filing of any patents or patent, Mr. Wright? [2644-80]

A. I do not have any recollection of having made any previous application to the one which Mr. Abbett first applied for.

Q.331: Was this your first experience with a patent attorney or patent lawyer?

A. Yes, it was.

Q.332: How did you come to go to Mr. Abbett?

A. I asked an individual who worked with M. O. —had worked with M. O. Johnston on this Oil Field Testing Company, and he told me that Mr. Abbett was his patent counsellor or lawyer, and that Mr. M. O. Johnston had employed Mr. Abbett.

Q.333: And you took that recommendation?

A. And I took that recommendation.

Mr. Scofield: Would you read that question and answer?

(Record read as requested.)

The Witness: To refresh my memory, when is the first response to this first application?

Mr. Lyon: I do not know, unless I looked at the file, and I haven't got it here, Mr. Wright. It is up-

(Deposition of Kenneth A. Wright.)

stairs. I can find it. If you want me to, I will send for it.

The Witness: To refresh my memory I would like to know when it was, because at this moment I am not certain.

Mr. Lyon: We will take a recess until I get it. [2644-81]

(A short recess was here taken.)

Q.334: (By Mr. Lyon): I have before me Plaintiff's Exhibit 9 in the Los Angeles civil action 7839, which is a photostatic copy of the file wrapper of the Wright application, Serial No. 291002, and I am endeavoring to answer your question, Mr. Wright, as to the date of the first action of the Patent Office upon your application, and I find in the file a photostatic copy of an action from the Patent Office, paper No. 3, dated November 14, 1939. Now, I place this action in front of you, and ask you if that in any way refreshes your recollection, or is that what you were asking for?

A. That is what I was asking for. This is what I was asking for. That is November 14, 1939.

Q.335: Now that you have it before you, do you desire to alter or change any of your testimony previously given?

A. Yes, I find my memory was in error, because before the response to that application was replied to the Jones-Berdine tests were discussed with Abbott, and my recollection was that that response was later than that.

(Deposition of Kenneth A. Wright.)

Q.336: I hand you——

Mr. Scofield: Did you say “were discussed with Abbett”?

The Witness: Yes, I showed—— [2644-82]

Mr. Scofield: The Jones and Berdine report?

The Witness: ——him the paper and discussed it with him.

Q.337: (By Mr. Lyon): I show you a further part of this file of this application, previously referred to, paper No. 4, which is dated May 8, 1940, and is apparently the response to the Patent Office action of November 14, 1939, and ask you if that is the response you refer to in your previous answer?

A. This is the response to which I made reference.

Q.338: And it was before that response was forwarded to the Patent Office that you had taken up then with Mr. Abbett the Jones and Berdine report?

A. That is correct.

Q.339: And I presume you mean by that the report of Exhibit L.

Mr. Scofield: Is there any mention in that response to the Jones and Berdine report?

The Witness: I have not read it to verify it. to see if there is or is not.

Q.340: (By Mr. Lyon): On page 5 of that report is the following statement:

“And accompanying this announcement a mimeographed copy of paper No. 801-16-B was [2644-83] put out by the Division of Production of the American Petroleum Institute in Los Angeles in a

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paper entitled 'Oil Well Cementing, Factors Influencing Bond between Cement and Formation, P. H. Jones and Denis Berdine of the Union Oil Company of California.'"

Does that answer the question, Mr. Wright?

A. That is correct, if you have read this correct.

Q.341: You check my reading.

A. Well, one of those is confused, if 801-16-B is the title of that paper.

Q.342: I have in my hand a paper which shows it as 901-16-B.

A. With the notation Mr. Lyon has just supplied, on one is "9" and on one it is "8," but the title of the paper is identical with this one.

Q.343: There were not two such papers shown, were there?

A. Not to my recollection or knowledge at any time.

Q.344: It is apparent, then, that the answer to Mr. Scofield's question which he asked you was "Yes," is it not?

A. That is correct. [2644-84]

Mr. Lyon: Now, this morning I said I would produce a copy of a letter written to Mr. A. M. Houghton, December 5, 1947, by Mr. Paul D. Foote. I am producing at this time a photostatic copy of that letter, which letter is Petitioner's Exhibit 1 to one of the papers filed in this proceeding, and ask you if you will accept it as a true photostatic copy of the letter?



(Deposition of Kenneth A. Wright.)

Mr. Scofield: Yes, that appears to be a photostatic copy.

Mr. Lyon: I will offer the photostatic copy of the letter just produced in evidence as Petitioner's Exhibit 4C.

(The letter referred to was marked by the Notary Public as Petitioner's Exhibit 4C, and made a part of this deposition.)

The Witness: Before you ask another question, Mr. Lyon, I would like to make a voluntary correction in my testimony of yesterday, wherein I made an error in computation when I said that the allowable tolerance in casing diameter in three-quarters of one per cent, and thereafter applied that percentage of factor to a 10-inch casing, and stated that three-quarters of one per cent of that diameter would be  $1/10$  of an inch, and then made subsequent computations involving that first error. The correct [2644-85] amount is  $75/1000$ ths of an inch plus or minus, and the combined addition of the plus or minus would be approximately  $5/32$ nds of an inch, and not the  $2/10$ ths of an inch which I stated. Is that permissible and correct?

Mr. Lyon: It is permissible for you to correct your testimony at any time that you find that you have made an error, Mr. Wright. As to its correctness, I presume that you have now testified correctly. My computations now agree with yours.

\* \* \*

(Deposition of Kenneth A. Wright.)

Q.345: (By Mr. Lyon): You want the second response? A. Yes. [2644-86]

\* \* \*

Q.346: (By Mr. Lyon): You asked about the second response. The second response in the application Serial No. 291027, which eventuated into Patent No. 2338372, is shown by the file wrapper which I have in front of me, and is paper No. 5, dated September 11, 1940.

A. September 11, 1940? [2644-87]

Q.347: You asked with reference to that second response from the Patent Office. Why, Mr. Wright?

A. I note that the second response was dated in the Patent Office September 11, 1940. Which way do I look to find what Claim 12 is, down or up?

Mr. Scofield: Is that in the 317 patent or 352?

The Witness: Because it has got the word "cement" in it, according to my recollection.

Q.348: (By Mr. Lyon): Claim 12, which you have asked about, is a claim which was added by the first amendment filed in the application, that amendment being the one previously referred to as being dated May 8, 1940. Now, that Claim 12 is set forth in full upon page 3 of that first amendment, and I place it before you.

A. Without reading the entire claim, I recollect some matter pertaining to it.

Q.349: All right, what reference did you have to Claim 12?

A. Claim 12 has got the word "cement" in it on

(Deposition of Kenneth A. Wright.)

the first or second line, "cementing" in the first line.

Q.350: It also has it in the fifth line from the bottom of the claim, does it not?

A. Oh, yes, that is correct.

Q.351: What significance did you have with reference to that, in calling our attention to [2644-88] it?

A. I pointed out to Mr. Abbett that the word "cement" might be found to be a debatable or controversial word.

Q.353: All right. Now, you subsequently transferred these applications to another patent agent or attorney, did you not? A. That is correct.

Q.354: And that was Mr. William H. Maxwell?

A. That is correct.

Q.355: The approximate date of that transfer of this application and your work from Mr. Abbett to Mr. Maxwell, I believe is shown, is it not, by the date of the power of attorney to Mr. Maxwell dated sometime in February, 1942, as shown in this file, is that correct, in February, blank day?

A. That only applies to one of them.

Q.356: That applies to this particular application?

A. That is correct, and the date is in February of 1942.

Q.357: That change of attorney is shown to have been recognized by the Patent Office on February 3, 1942? A. February 3, 1942.

Q.358: Mr. Maxwell continued to handle these matters for you, did he not, until litigation in this

(Deposition of Kenneth A. Wright.)

matter arose?           A. That is correct. [2644-89]

Q.359: Now, Mr. Wright, Maxwell filed for you an application for a patent, Serial No. 777640? The application was filed on October 3, 1947, for a sectional wall scratcher, and I hand you our file of that application; is that correct? Here is the application.

A. The question now?

Q.360: I feel sure this application which I am putting before you right now, together with the filing receipt for that application——

Mr. Scofield: The application itself, of course, is the best evidence.

The Witness: That is correct, October 3, 1947.

Q.361: (By Mr. Lyon): I want you to refer to the claims of that application to which you took oath, and tell me if it is not true that each one of those claims calls for a hinged or bifurcated collar structure?

A. Will you just enlarge on the "bifurcated"?

Q.362: In that regard I will point out to you the following in Claim 1 of the application. Claim 1 of that application as filed was the omnibus type. Claim 1 calls for each and every novel feature as disclosed in the application; that is correct, is it not, and you are watching me while I am reading?

A. That is correct.

Q.363: Claim 2 calls for a body including arcuate sections conforming to the exterior of the well part and [2644-90] means connecting the sections together around the well part and means connecting the sections together around the well

(Deposition of Kenneth A. Wright.)

part? A. That is correct.

Q.364: That is a hinged structure, is it not?

A. That is correct.

Q.365: Now, Claim 3 called for, and I am reading the original claims; the body including two semi-circular sections and means connecting the sections together around the well part?

A. That is correct.

Q.366: That is also a hinged structure, is it not?

A. That is correct.

Q.367: Claim 4 calls for the body including two semi-circular sections, and I am omitting, and means connecting the sections together around the well part? A. That is read correctly.

Q.368: That is a hinged structure, is it not?

A. That is correct.

Q.369: Claim 5 calls for the body including two semi-circular sections, and I am eliminating again—— [2644-91]

\* \* \*

Q.370: Claim 5 calls for the body including two semi-circular sections, and I am reading from the claim filed, and means connecting the sections together around the well part. That is correct?

A. That is read correctly.

Q.371: And that is a hinged structure?

A. That is correct.

\* \* \*

Q.372: (By Mr. Lyon): And Claim 6 of the application as filed calls for the body including two

(Deposition of Kenneth A. Wright.)

semi-circular sections, and skipping again, and means connecting the sections together around the well pipe? A. That is correct.

Q.373: That is a hinged structure?

A. That is correct.

Q.374: And Claim 7 calls for the body [2644-92] including two semi-circular sections, and skipping in the claim, and means connecting the sections together around the well part; that is correct, is it not? A. That is correctly read.

Q.375: And that is a hinged structure?

A. That is correct.

Q.376: Claim 8 calls for the body including two semi-circular sections with meshing ears at adjoining edges and pins coupling the ears of the two sections. That is a hinge structure, is it not?

A. That is correct. [2644-93]

\* \* \*

Q.378: (By Mr. Lyon): Claim 9 of the application reads: the body including two semi-circular sections with apertured ears at each edge of each section, meshing to register the apertures thereof, and pins engaged in the registering apertures to couple the sections. That is correct, is it not?

A. That is correctly read.

Q.379: And that also refers to the hinge structure, does it not? A. That is correct.

Q.380: And Claim 10 calls for the body including the two semi-circular sections, with apertured ears at each edge of each section, the ears of these

(Deposition of Kenneth A. Wright.)

sections meshing to register the apertures thereof, and pins engaging in registering apertures to couple the sections. That is the hinge structure, is it not? [2644-94]      A. That is correct.

Q.381: And Claim 11 calls for an elongated tubular body including two semi-circular sections with meshing ears at adjoining edges, each section including a main portion spaced from the well part and having a plurality of finger openings and flanges at the ends of the main portion engagable with the exterior of the well pipe, and connecting pins engaged in the meshing ears. That is correct, is it not?

A. You said "pip" and the word is "part." With that alteration, that is correct.

Q.382: And it also refers to the hinge structure, does it not?      A. That is correct.

Q.383: And Claim 12 calls for an elongated tubular body including two semi-circular sections with meshing ears with registering apertures at adjoining edges, each section including a main portion spaced from the well part and extending substantially parallel therewith and having a plurality of finger openings and flanges projecting readily inward at the ends of the main portion engagable with the exterior of the well part, and connecting pins engaged in the apertures of the meshing ears. That is correct, is it not?

A. That is correct. [2644-95]

Q.384: And that refers to the hinge structure; does it not?      A. That is correct.

(Deposition of Kenneth A. Wright.)

Q.385: Claim 13 reads precisely in the part that I have read the same as does Claim 12, does it not?

A. As far as I can read it, that is correct.

Q.386: And that also refers to the hinge structure?

A. That also refers to the hinge structure.

Q.387: And Claim 14 in the application as filed, beginning on line 2 of Claim 14 and extending through line 8, defines the two section hinge structure with the connecting pin, does it not?

A. That is correct.

\* \* \*

Q.388: (By Mr. Lyon): Claim 15 defines the well scratcher as including sections arranged edge to edge with connecting members joining the sections together at their edges, does it not?

A. That is correct.

Q.389: And that refers to the hinge structure, does it not? A. That is correct. [2644-96]

\* \* \*

Q.391: (By Mr. Lyon): Claim 16 also includes the definition that the structure includes sections arranged edge to edge, and that the sections are secured together in that edge to edge relationship by pins engaging the connecting ears, does it not? A. That is correct.

Q.392: I did not attempt to read word for word on that, but you followed my explanation of the claim from the copy of the Claim 16, did you not?



(Deposition of Kenneth A. Wright.)

A. That is correct.

Q.393: And it also refers to the hinge structure, does it not? A. That is correct.

Q.394: Now, Claim 17 calls for this same multiple section structure with the sections arranged edge to edge, and calls for the sections having registering ears at the [2644-98] adjoining edges and pins engaging the ears and connecting the sections together, does it not?

A. That is correct.

Q.395: And that also refers to the hinge structure described in this application, does it not?

A. That is correct.

Q.396: And as shown by this file, this application included seventeen claims only when it was filed; is that correct?

A. Where do you find seventeen?

Q.397: It is not on the filing receipt. I said as shown by the file that is the limit of the claims?

A. That is correct.

Q.398: So that every claim of this application as filed was limited to the hinged structure as shown in the drawings, where you had sections as shown in the Figures 1, "X" and "Y," which were joined together by connecting pins, designated with the letter "T," I believe in Figure 1; is that correct?

A. That is correct.

\* \* \*

Q.399: (By Mr. Lyon): Those are the claims to which you took oath, are they not?

(Deposition of Kenneth A. Wright.)

A. That is my understanding. [2644-99]

\* \* \*

Q.400: (By Mr. Lyon): Now, Mr. Wright, reference has been made to a conference had between you and Mr. Barkis at the California Club on or about August 22, 1946, with Mr. Scofield. Do you recall that conference? A. I do.

Q.401: Do you recall it was had on that day or beginning that day? A. I believe it was.

Q.402: Will you tell me how that conference was arranged, if you recall?

A. At the request of Mr. Thomas E. Scofield.

Q.403: How did you hear from Mr. Scofield?

A. My recollection is that a telegram——

Q.404: That is, he telegraphed you; where from?

A. Kansas City.

Q.405: Did he in that telegram ask you to meet him and arranging the time for the meeting?

A. I believe that is correct. [2644-100]

Q.406: And pursuant then to that arrangement——

\* \* \*

The Witness: It could have been telephone, I am not at this moment exactly certain.

Q.407: (By Mr. Lyon): It was either the telephone or a telegram? A. That is correct.

Q.408: If it was a telegram, you don't have the telegram available at the present time, do you?

A. Not before me.

Q.409: Was any request made in the communica-

(Deposition of Kenneth A. Wright.)

tion arranging for this that you meet with Mr. Scofield with your attorney?      A. There was not.

Q.410: I presume that pursuant to the arrangements made with Mr. Scofield that a conference was had?      A. That is correct.

Q.411: Did you and Mr. Barkis have more than one conference with Mr. Scofield at that time or about that time?

A. There was only one conference, according to my recollection, between Mr. Scofield, Mr. Barkis and myself.

Q. 412: At that conference did you take an attorney [2644-101]

A. No, I did not.

Q.413: Were you advised by Mr. Scofield at the time of this conference that perhaps you should have an attorney present?

A. He did not advise me.

Q.414: Did he make any suggestions that you should have an attorney present or that you should call one at any time during that conference?

A. He did not.

Q.415: Did you at any time during that conference or with Mr. Barkis ever call any patent agent or attorney?

A. I have no recollection whatsoever of making any calls to any such person.

Q.416: At that conference will you state precisely, as nearly as you can recall it, the conversation had between each of the parties present, and if

(Deposition of Kenneth A. Wright.)

you cannot give the precise conversation give to the best of you recollection its entire substance.

A. The substance of that conversation, according to my present recollection, and I will note that I heard Mr. Barkis' testimony, and I heard Mr. Scofield read into the record his memorandum, so that——

Q.417: You mean a memorandum?

A. He asserted it was his, according to what I heard him say. The conference was held in the afternoon [2644-102] of August 22, 1946, at the California Club, Barkis, Wright and Scofield being present, and Mr. Scofield was extremely critical of the contract and what it contained or called for, and implied that he would never have let—never would let Mr. Hall go along under that contract, and we would therefore have to make an amendment, and he had an amendment prepared, which he presented.

Q.418: Just a minute there. Just what do you mean that he would never let Mr. Hall go along on a contract?

A. Well, it was his statement the contract would have to be altered, so if it was altered, why, a new condition would have to be—come into existence.

Q.419: Well, do you mean that he stated that he would not have let Mr. Hall go along on a contract?

A. I meant by that he stated the contract would have to be changed, or else there would have to be some litigation and he also, according to my recollec-

(Deposition of Kenneth A. Wright.)

tion, asserted that he was going to employ the firm of Lyon & Lyon to do so. [2644-103]

\* \* \*

Mr. Lyon: Proceed with your statement as to what the conversation was that was had at the California Club at that time?

A. We asked Mr. Scofield for some reason or statement why he had abandoned the two applications which were involved in the contract which was entered into on September 15, 1944, and he stated that he had filed additional applications, and we asked him who owned them, and he said they were the property of Mr. Hall, but that he would assign them if we would sign the—execute the amendment to the contract.

Q.420: Did you ask to see those applications?

A. My recollection is I asked him what he had done, and not being entirely familiar with what those things consisted of; he said that he would show us the application which he had made, and I believe he did at [2644-104] that time, although he retained possession of it.

Q.421: Did you any time later obtain a copy of the application that he showed you at that time?

A. Mr. Scofield, according to my present recollection, he said that he would provide B & W with a copy of some of the transactions, and that I could pick them up in one bundle the next morning at the desk of the California Club.

Q.422: Did you do so?

(Deposition of Kenneth A. Wright.)

A. I did pick them up the next morning at the California Club.

Q.423: Do you recall what you obtained at that time? What did you obtain in this bundle?

A. I am not able to properly identify them in their entirety.

Q.424: What did you do with them?

A. I went over to Mr. Maxwell's office with them, and asked him to look at them.

Q.425: Were you advised that you would have to return this bundle of papers that you received?

A. The arrangement was that they would be returned to Mr. Scofield on Monday morning, I believe.

Q.426: And you were under promise not to make any copies of them, weren't you?

A. That was my understanding. They were for examination, [2644-105] they were for the purpose of examination only.

Q.427: And you did return them after you had exhibited them to Mr. Maxwell?

A. I did return them to Mr. Scofield personally, according to my recollection.

Q.428: Have you any recollection as to what these papers were?

A. I cannot identify them in their entirety, and call them by name.

Q.429: Was there a copy of the 627013 application?

A. My understanding was that there was a copy

(Deposition of Kenneth A. Wright.)

of the application—would you call that number again?

Q.430: 627013.

A. There was a copy of that application, according to my recollection.

Q.431: Were there any other papers?

A. I believe the others referred to the two abandoned applications.

Q.432: What papers were those, do you recall?

A. Whatever the proceedings are in the Patent Office.

Q.433: How big a bundle was this?

A. It was a package about twice as thick as this, maybe three times as thick as this particular file.

Q.434: This file being about, let me see, about 3/16ths [2644-106] of an inch, then that would have been a little over a 1/2-inch file; is that correct?

A. That much, at least, or a little bit more.

Q.435: Was it a photostatic copy?

\* \* \*

The Witness: There were drawings enclosed, so that there were—my recollection is that there were drawings attached to typed sheets, but that is purely speculation and—but I know there were drawings.

Q.436: (By Mr. Lyon): During this time did you tell Mr. Scofield that you would not modify the contract?

A. I told Mr. Scofield we were not interested in his—in changing the contract, or any alteration.

Q.437: Do you recall any other conversation

(Deposition of Kenneth A. Wright.)

had at this time and place with Mr. Scofield concerning this attempt to modify or rewrite the contract of September 15, 1944?

A. In the discussion between the three of us on August 22, 1946, there were several statements made by me to the effect that Mr. Hall had no rights whatsoever in the interference, and the contract was the result of him knowing that he had no rights as to the entire invention of these—of this general set of ideas.

Q.438: In Mr. Scofield's memorandum or the memorandum which was read here, there was a statement that there was [2644-107] considerable comment as to Hall's standing in the interference, and it was Wright, et al.'s opinion that by no stretch of the imagination could he prevail. Is that substantially a correct statement with respect to what transpired during this time?

A. Would you read it again, or let me read it?

Q.439: I will let you read it. It is a transcript taken from the testimony. I haven't had an opportunity to check it word for word, I don't think anybody else has.

A. That is correct. If the word "he" refers to Hall in this third line, why, that is correct, Hall had no chance of prevailing in the interference.

Q.440: Did you explain to Mr. Scofield why?

A. I did.

Q.441: What explanation did you make?



(Deposition of Kenneth A. Wright.)

The Witness: —I had information that Mr. Hall was present at the Jones and Berdine test here at Dominguez Oil Field in December of 1939, January, 1940; had observed our—my scratcher in operation there, and what it had done in the way of constructive results, and that we had been actively in the business of selling scratchers for about a year and a half prior to Hall's coming on the market [2644-108] with a scratcher; and that this Jones and Berdine operation had been made the subject of an API report. It had been transmitted by catalog, by newspaper and magazine articles—strike “newspaper”—I mean only periodicals of the industry, so that in my opinion he had no standing whatsoever in the interference.

Q.442: (By Mr. Lyon): Were you present at any time when Mr. Scofield had a telephone conversation with Mr. Maxwell?

A. No, I was not.

Q.443: Did you learn that on the following Monday that Mr. Scofield had talked with Mr. Maxwell?

A. Mr. Maxwell told me that very shortly after the conversation, and I don't—I mean within a day or two days.

Q.444: Was any discussion had at this time of B & W selling its business to Mr. Scofield or Mr. Hall?

A. It is my recollection that Mr. Barkis made some mention of it, would they be interested in buy-

(Deposition of Kenneth A. Wright.)

ing B & W, but it did not materialize into any discussion.

Q.445: Were you told at this time by Mr. Scofield that unless you signed a supplemental agreement that Hall would not continue thereunder, but would file a suit in the courts?

A. It was my understanding that it was an ultimatum, that we would have to sign the amendment to the [2644-109] contract, or whatever the document might be termed, or else we would suffer that risk.

Mr. Lyon: We will take a recess for just a few minutes.

(A short recess was here taken.)

Q.446: (By Mr. Lyon): Mr. Wright, what is the accuracy used in the manufacture of scratchers and in the handling of scratchers and in their packing and shipping, to insure that a uniform product is mounted on a casing in the well?

A. I believe Mr. Barkis and subsequently by myself referred to the tolerances of the inside diameter of the device, the collar of the device in regards to casing, and in addition to that is the problem of the wire. Now, as I am informed, and observations I have made, wire of the nominal diameters which are used on these scratchers, which is in the 70 to 80 thousandths range, the manufacturer is permitted an allowable difference in diameter of 3 thousandths of an inch, and that might be a little more, but that is my present recollection, which means that on 78

(Deposition of Kenneth A. Wright.)

thousandths of an inch wire specification by purchase you can have a minimum of 75 thousandths, a maximum of 81 thousandths. And it is observed that any coil wire will change from the starting end to the finishing end in its diameter, as well as in between.

Now, scratchers are formed on any one [2644-110] of a great number of dies or jigs which humans devise, some hand-winding and hand-angle forming. Some are power machines. Each one of them has its own ingenuity for forming the wire according to what the particular type might be desired. The diameter of any wire is related to the maximum angle of deformation which the manufacturer limits in its recommendation. So, when you do make a coil out of wire, spring steel wire of this nature, you, first of all, have a variable diameter coil as a product, due to this variation in diameter of the wire itself. You have additional variations if you wind it over a core or by some one of the methods of winding coils. The angle at which the wire goes off from the last particular coil into a free section is a variable, because when you get the last wind in the machine, why, you usually overwind or overform, and subsequently, depending upon the particular use which you are making of the wire, normalize the wire, so as to even change the molecular structure of the wire. At that time there is a creeping action. It could also be described as warping, and this overbending is of an amount which a particular manufacturer will use so as to get some degree of uni-

(Deposition of Kenneth A. Wright.)

formity after the normalizing. And then after this, all of this multiplicity of variables, and I would additionally note that actually at the winding of the coils about the core or the other methods, the distance [2644-111] apart, apart of the particular coils will vary according to the machine and the irregularities of the diameter, so we come to the point of taking one of these scratcher wire fingers with a coil interposed between the two ends, and place the two ends of two of the scratcher fingers over a rivet by hand, and then in some manner hold it while it is struck with a riveting machine, and that can be one blow or numerous blows, depending upon the equipment utilized. The alignment of the coil within the holes through which they pass varies by the accuracy of the operator and his ingenuity in quickly assembling the device.

Thereafter the device is tossed, and I don't mean violently, into a pile from which they are subsequently picked up, singles or three or four at one time, whatever the particular worker might elect to do, and either dipped it into big vessels or put on conveyors so that the pinning operation is taking place. From there they are tossed or placed in bins or boxes, and in bins I have seen them eight foot high or higher, stacked in great numbers, without any regard whatsoever of the position of one over the other, just simulating wheat poured in a sack, and that is a strong observation, but nevertheless, it is of that nature.

From there they are placed in boxes of variable

(Deposition of Kenneth A. Wright.)

sizes, and in the case of the device of this nature which we supply the industry, there are from twenty-five [2644-112] to forty or more of these scratchers in one box. I have seen Mr. Hall's scratchers in an open van on—strike the word “open”—in a van in which there were a large stack tossed in in the same manner I have previously described, and from there they go either through supply houses or by service men to the well, where they are unpacked if they had been in boxes, or tossed on the casing rack or on top of the casing. Thereafter they are slid on the casing in a manner which is accomplished by removing the protector, sliding them on the casing, and then the welder applies the beads above and below the scratchers, and in this process I would particularly note that the welder, after having finished the welding required on one joint of building the beads, he rolls the joint of casing over against the one previously mounted, in which the wires are deformed between their end, outer end and the coil, and are subjected to a pretty rough treatment. And when the time comes to run this device mounted joint of casing into the well it is rolled off the casing rack onto blocks or on the rig floor frequently, and then pulled into the derrick up into the “V” as they call it, and subsequently latched onto by the small type elevators or cat line, and hoisted up into the derrick preparatory to being screwed into the previously run-in joint. So that the accuracy of the devices from start to finish [2644-113]

(Deposition of Kenneth A. Wright.)

is extremely variable, and to reduce this thing to minimums is out of limit.

In addition to that, I would say that different manufacturers of steel wire have different physical and chemical specifications, and you have to account for those different specifications when you do the forming, because the creeping is more, the normalizing is different, and we will take all of this into consideration, and sell on the open market a 5½-inch scratcher for \$6.00, and include in that price discounts to supply houses and maybe other people entitled to some part of this total \$6.00 sales price, provide delivery to the well, for the service men there, and the reader of this can make his own estimate of how much money was spent in manufacturing the device, and the degree of accuracy that accompanied it and to extend this just a little further, why, the device will be taken clear to Eastern Venezuela and delivered to the warehouse of a consumer for a total of \$6.00 American money.

Q.447: I take it from what you say——

Mr. Scofield: Just a minute, let me have——

Q.448: (By Mr. Lyon): ——that these are not precision instruments? A. That is correct.

Mr. Scofield: Read the first part of that long answer, [2644-114] about the manufacture of the wires?

(Record read as requested.)

Mr. Scofield: Won't you fix the date of that wire operation?

(Deposition of Kenneth A. Wright.)

The Witness: I would like to make this addition: that in speaking of the riveted construction I am referring to the type of scratcher which was supplied the Gulf Oil Corporation in June or July of 1947, and observations made of Mr. Hall's product, having not seen him actually assemble a stud-mounted device in a shop, and that if I am in error in this variation in diameter permitted, the standards which are prevalent in the industry should be substituted.

Mr. Scofield: Well, ignore my question. I can bring it out on cross-examination.

Q.449: (By Mr. Lyon): When these scratchers are finally lowered in the well on the casing are the wires at the same angles with relation to the radial lines of the scratcher?

A. Repeat that question, please.

Mr. Lyon: Read it, please.

(Question read by the reporter.)

The Witness: I interpret that you mean all of the same angular relation?

Q.450: Yes. [2644-115]

## DEPOSITION OF KENNETH A. WRIGHT

(In Rebuttal)

## Direct Examination

By Mr. Lyon:

Q.1: You are Kenneth A. Wright, who previously testified in this matter, are you not?

A. I am.

Q.2: You are an officer of B & W?

A. I am an officer of B & W, Incorporated, a California Corporation.

Q.3: There has been some question concerning your filing of your original applications brought out by [2644-322] cross-examination of Mr. Barkis in this proceeding. You filed originally what application, the first one?

A. Do you want me to identify it by number?

Q.4: Or substance. I will give you the number unless you know the number.

A. I don't recollect numbers.

Q.5: Which one was it?

A. The first one was described as a Method Patent.

Q.6: I will place before you what I believe to be the method patent which you are referring to and a copy of which has heretofore been placed in evidence, and that is Patent No. 2338372, is that correct?

A. That is the number of the patent for which I applied and subsequently received, the patent numbered as you stated.



(Deposition of Kenneth A. Wright.)

Q.7: The application for that patent was filed according to the notation contained thereon, on August 19, 1939. Prior to the filing of this application, had you discussed with Mr. James M. Abbett, the attorney, the substance of this application?

A. I had.

Q.8: Had you and Mr. Barkis together discussed that matter with Mr. Abbett?

A. No, not together. I mean by that that my recollection [2644-323] is my discussion—I am the only one that had the discussion with Mr. Abbett prior to this filing. Mr. Barkis and I discussed it together, but not in the presence of Mr. Abbett.

Q.9: Now, subsequently you filed an application through Mr. Abbett for a second patent, that being 2374317, a copy of which I place before you, is that correct, Mr. Wright?

A. I am the patentee of Patent No. 2374317 and Mr. James M. Abbett was my attorney for part of the time when that patent application was made.

Q.10: But that application was filed at the time that Mr. Abbett was representing you in these matters, was it not?      A. That is correct.

Q.11: It has been pointed out that there is no disclosure in your application—in either of the applications that resulted in the granting of either of these patents as to how these scratchers were mounted upon the casing. Have you any explanation for that?

\* \* \*

A. With reference to the first patent, and I am

(Deposition of Kenneth A. Wright.)

calling this 2374317 the second patent, Mr. Abbett said and his advice was "This is a method patent, requiring [2644-324] only schematic drawings, illustrations, et cetera."

With reference to the second patent I supplied Mr. Abbett with copies of the Jones & Berdine paper which has been mentioned in these proceedings numerous times, which contains the illustrations and photographs, and supplied him also with our Bulletin 10, and it was his advice and counsel, which I followed, that using the word "secured" and illustrating it in the manner shown in this particular patent was the correct way and the only necessary way to illustrate it.

\* \* \*

Q.12: (By Mr. Lyon): State whether or not you discussed with Mr. Abbett including in this application for what you have described as the second patent, and I will refer to it as the 317 patent, setting forth in there the rotatable mounting of the scratcher.

A. Mr. Abbett's counsel and advice was that things illustrated in that manner, rotatable on casing or on devices, was so old, and was not patentable, and advised me to file it in the manner which—in the form which this takes. [2644-325]

\* \* \*

Q.13: (By Mr. Lyon): Did you discuss this advice with Mr. Barkis?

(Deposition of Kenneth A. Wright.)

A. I have no recollection of discussing that particular feature with Mr. Barkis.

Q.14: You carried on the prosecution of this application for some time with Mr. Abbett, I believe you have stated, on these applications, and then you changed attorneys, did you?

A. That is correct.

Q.15: Why?

A. I came to the conclusion that Mr. Abbett, and I regret to say that the gentleman has passed on, and I do not mean to belittle him, but I lacked confidence in his decisions and conclusions and advice.

Q.16: I notice in none of the patents or your advertising is ever used the word "rotatable" with reference to the mounting. How do you explain that, Mr. Wright?

\* \* \*

The Witness: your question is directed solely to the use of the word, specific word "rotatable"?

Q.17: (By Mr. Lyon): That is right. [2644-326]

A. And limited to that?

Q.18: Right.

A. In all of our advertisements the devices are illustrated rotatably mounted between stops, and never in any other manner, and it is my observation, after having thirty some odd years in this industry, that all the people that are in this industry know by looking at it what it means and how to mount it and use it. It is not necessary to put the word "rotatable" on it any more than you might in

(Deposition of Kenneth A. Wright.)

advertising an automobile have an arrow pointing to the wheels and the expression "these turn," "these wheels turn" or "wheels turn on their axles."

Q.19: I notice also that in your 317 patent there is only one form of scratcher illustrated. Have you an explanation for that, Mr. Wright?

A. I followed the advice and counsel of Mr. Abbett, a patent attorney, who had charge of the prosecution of the patent at that time.

Q.20: Had you ever filed a patent application before you filed the applications for these two patents?

A. According to my recollection, these two are the first two.

Q.21: So that you were totally without experience with respect to these matters at that time; is that correct? [2644-327]

A. That is correct.

Q.22: In the specification 317 patent set forth upon page 3, lines 64 to 68, a certain relationship of the wire ends to the well bore. Will you read that sentence and state whether or not that is the way in which all scratchers were operated up to at least the time of the filing of that application?

\* \* \*

Mr. Lyon: 64, first column, page 3. It starts at line 64.

The Witness: I will start reading at line 64, column 1 of page 3, which reads as follows:

(Deposition of Kenneth A. Wright.)

“When a lifting, lowering or rotating action is produced, the end of the fingers ‘22’ frictionally engage the well bore and these fingers tend to flex so that the end position of the portions ‘24’ scrape the walls of the well bore.” Ending on line 68.

Q.23: (By Mr. Lyon): Was that statement intended by you, Mr. Wright, to be a teaching as to how these scratchers should operate?

A. That was my intention.

Q.24: Will you explain why you were desirous of having the ends of the wires engage the well bore? [2644-328]

A. The application—strike that—The patent which I was attempting to obtain called for the operating of the well wall at a certain time—Strike that and I will start over.

The intention was to provide a device for operating the walls of the well, and my conception of abrading was that it should require the end of the wire, or a wire end, whichever is preferable.

Q.25: What type of formation or what type of structure were you trying to abrade, Mr. Wright?

A. The principle object of the invention was to abrade the permeable strata where the——

The Reporter: Will you repeat that, please?

The Witness: Where the production sections are positioned, which are under sand sections, usually.

Q.26: (By Mr. Lyon): I believe that you continued to make some statement which was not caught by the reporter with respect to the positioning of the filter cake.

(Deposition of Kenneth A. Wright.)

A. It is only on the permeable strata that the filter cake is deposited.

Q.27: What do you mean when you use the words "filter cake"?

A. Filter cake is a deposit on the permeable strata of a well composed of the solid material of the drilling fluid and that is the filter cake, and although [2644-329] it is suspended in whatever fluid the filter cake—whatever fluid might be used to drill the well.

Q.28: Well, now, can you explain the operation of the deposition of that so-called filter cake on the permeable strata? For example, compare it with the ordinary filtering operation through a filter paper, if you can.

\* \* \*

The Witness: The filtration method or process phenomenon in a well on the permeable strata is identical with the phenomenon of filtration through a filter paper in a laboratory or wherever it takes place; that is, it is a separation of the fluid material from the solid material.

Q.29: (By Mr. Lyon): And fluid material passes through the filter paper or through the permeable strata, is that right?

\* \* \*

The Witness: That is correct.

Q.30: (By Mr. Lyon): Now, you have stated that you wanted the ends of the wires to abrade the formation; why?

\* \* \*

The Witness: The filter cake in my opinion

(Deposition of Kenneth A. Wright.)

should [2644-330] be removed in order to permit the cement to have direct contact with the wall of the well at those positions.

Q.31: (By Mr. Lyon): State whether or not those are the critical positions in a cementing operation.

\* \* \*

The Witness: The critical part of a well is the cementing of the casing opposite the production sections, be that gas or oil, or it could even conceivably be water, the perfect cementation between upper and lower limits of each of these permeable strata.

Q.32: (By Mr. Lyon): What is the object of cementation?

\* \* \*

The Witness: The object of the cementation is to permit you to withdraw from that particular strata the fluid or gas contained therein to the exclusion of any other undesired portion of the well.

Q.33: (By Mr. Lyon): Does the wall cleaning guide in a well operate to abrade the well wall by having the ends of the wires in contact with the wall surface?

\* \* \*

The Witness: Yes, they do.

Q.34: (By Mr. Lyon): Does it abrade the wall in any other way? [2644-331]

\* \* \*

The Witness: I don't understand you.

Q.35: (By Mr. Lyon): Does it abrade the well

(Deposition of Kenneth A. Wright.)

wall in any other way other than the ends of the wires in engagement with the well wall?

\* \* \*

The Witness: The purpose of the device in my opinion—the purpose of the device in my design, in my opinion the ends, the outer ends abrade the well wall.

Q.36: (By Mr. Lyon): Mr. Wright, I hand you Exhibit HHH, which is a Weatherford scratcher purchased, and I ask you if to your knowledge there has been any change whatsoever made in that scratcher other than the cutting of the ends of the wires off and welding the collar together?

A. According to my knowledge, this device is unaltered except for cutting the ends to a uniform diameter and it is changed from a split ring or sleeve to a solid ring by welding at the points which are blackened so as to make a continuous ring, which it was not at the time of receipt by B & W.

Q.37: Has there been any change whatsoever made, to your knowledge, in the direction that the coils extend in either row of such coils with respect to the radius of this scratcher?

A. Not to my knowledge.

Q.38: Mr. Wright, I will refer you to [2644-332] Figure 27 of the Jones & Berdine report, and I call your attention to the fact that there is more or less a saw-toothed formation at the end of the cement——

\* \* \*



(Deposition of Kenneth A. Wright.)

Q.39: (By Mr. Lyon): —where the cement is of an enlarged diameter approximating that or is that of the inside diameter of the canvas bag, and I will ask you if you observe that that is a saw-toothed shoulder. First, do you make that observation?

\* \* \*

The Witness: I am sorry, but Mr. Scofield's interruption caused me to lose the trend of your question.

Q.40: (By Mr. Lyon): I first want to know if that, in your opinion, is a saw-toothed shoulder at the point I defined.

\* \* \*

The Witness: This is a general term which might be [2644-333] applied to that particular point on this billet.

Q.41: (By Mr. Lyon): In your opinion, could the wall cleaning guide that had been utilized in that test produce a uniform or even should under the conditions of its operation in the test portrayed by Figure 27 of the Jones & Berdine report?

\* \* \*

The Witness: In my opinion, it could not.

Q.42: (By Mr. Lyon): Why?

A. There are several reasons, one of them being that during the period that fluid cement passed by this scratcher there was only one and a half reciprocations, so that there was deposition, removal, and redeposition during this period of time, and sufficient time and number of strokes were not

(Deposition of Kenneth A. Wright.)

permitted to make anything close to a uniform pattern at that point on the billet.

Mr. Scofield: Will you read that answer, please?

Q.43: (By Mr. Lyon): Proceed, just finish your answer.

A. That is the principle one.

Q.44: All right.

Mr. Scofield: Read the answer please, Mac.

The Witness: There is also, if I may add, the question of whether the operator lowered the casing to the same point at each time he made a reciprocation at any time during the operation, because it was a manually-operated [2644-334] operation carried out by a man on the tank.

Q.45: (By Mr. Lyon): Now, is it also true——

Mr. Scofield: Wait just a minute. Read the answer.

Mr. Lyon: Just a minute, until we finish, and you can get it then.

Q.46: Isn't it also true that the wires of the well cleaning guide are positioned around the periphery of that guide in a spiral fashion?

\* \* \*

The Witness: The device which—a replica of the device which caused this pattern that is in evidence here is here on the table before us, and the device speaks for itself.

Q.47: (By Mr. Lyon): That device you refer to is Petitioner's Exhibit M.

Mr. Scofield: Just a minute. Let me have the last two questions and answers, please.

(Deposition of Kenneth A. Wright.)

(Record read as follows:)

“Q.41: In your opinion, could the wall cleaning guide that had been utilized in that test produce a uniform or even shoulder under the conditions of its operation in the test portrayed by Figure 27 of the Jones & Berdine report?

“Mr. Scofield: The same objection. [2644-335]

“The Witness: In my opinion, it could not.

“Q.42: (By Mr. Lyon): Why?

“A. There are several reasons, one of them being that during the period that fluid cement passed by this scratcher there was only one and a half reciprocations, so that there was deposition, removal and redeposition during this period of time, and sufficient time and number of strokes were not permitted to make anything close to a uniform pattern at that point on the billet.

“Mr. Scofield: Will you read that answer, please?

“Q.43: (By Mr. Lyon): Proceed, just finish your answer. A. That is the principle one.

“Q.44: All right.

“Mr. Scofield: Read the answer, please, Mac.

“The Witness: There is also, if I may add, the question of whether the operator lowered the casing to the same point at each time he made a reciprocation at any time during the operation, because it was a manually-operated operation carried out by a man on the tank.”

The Witness: Operating a block and [2644-336] tackle.

(Deposition of Kenneth A. Wright.)

Q.48: (By Mr. Lyon): The length of the stroke of reciprocation was determined in this operation, was it not, by the man pulling on the rope?

\* \* \*

The Witness: Presuming the man was instructed previously, but the actual amount of rope he pulled through the block and tackle was operated by this man, and he alone performed that particular task.

\* \* \*

Q.49: (By Mr. Lyon): You were there, were you not, Mr. Wright, and observed this operation? [2644-337]

\* \* \*

A. Yes, that is——

The Witness: I witnessed one test where the man on the tank raised and lowered the casing in the simulated well bore, which was the steel cylinder with a canvas bag inside of it

\* \* \*

Q.51: (By Mr. Lyon): And the only way he had of determining the length of the stroke was his visual observation of how much rope he pulled through the block and tackle, was it?

\* \* \*

The Witness: As far as I was able to determine that is the only way he measured it or controlled it.

Q.52: (By Mr. Lyon): You have heard the testimony of Mr. Barkis given on direct examination two days ago, Tuesday? A. Yes, I did.

Q.53: And you heard his statement with reference

(Deposition of Kenneth A. Wright.)

to the fact that B & W had never received any assignment of the 627013 application; is [2644-338] that correct?

\* \* \*

The Witness: B & W had never received any assignment of patent application 623—627013.

Q.54: (By Mr. Lyon): Did B & W ever receive any assignment of the application Serial No. 55619?

\* \* \*

The Witness: They have not or it has not, which is more correct.

\* \* \*

The Witness: Speaking of the corporation as "it."

Q.55: (By Mr. Lyon): You were present in the court, Mr. Wright, in May of 1949, at the time of the partial trial of the action of Jesse E. Hall versus Kenneth A. Wright and B & W, Inc., Civil Action No. 7839? [2644-339]

A. I was.

Q.56: At that time do you recall hearing Mr. Scofield, in response to the court, state to the court that "I do not intend to assign the 627013 application to B & W"?

\* \* \*

The Witness: My own recollection is that he made that statement to the court.

Q.57: (By Mr. Lyon): Mr. Wright, there has been testimony given on behalf of Hall with reference to the deformation of scratchers, particularly wall cleaning guides. Are you familiar with the

(Deposition of Kenneth A. Wright.)

Shell tests that were run in Louisiana that Mr. Barkis referred to this morning?

\* \* \*

The Witness: It is my recollection that I saw either one or two of those scratchers in our Houston office some two or three months after these were given to Mr. Barkis.

Q.58: (By Mr. Lyon): In the scratchers that you saw, was there any deformation of the wires?

A. No. [2644-340]

\* \* \*

Q.59: (By Mr. Lyon): Mr. Wright, I will hand you two photographs and I will ask you if you can identify these photographs? A. I can.

Mr. Lyon: I will ask that the photographs which I handed to the witness and which he says he can identify be marked for identification as the Petitioner's Exhibits 6Z-1 and 6Z-2.

(The photographs referred to were marked by the reporter as Petitioner's Exhibits 6Z-1 and 6Z-2, copies of which are made a part of this deposition.)

Q.60: (By Mr. Lyon): Will you tell me what the photographs 6Z-1 and 6Z-2 are, Mr. Wright?

A. These are photographs which I instructed to be taken of the scratcher which I obtained down in the Long Beach oil field area after it had been removed from a casing which had been pulled from a well and was cut from the casing by a welder, and the welder was not in the employ of B & W, nor, did he do this cutting or removing [2644-341] at my

(Deposition of Kenneth A. Wright.)

instructions or request. I took the scratchers—this scratcher and had the photographs and the prints developed from the negatives taken.

Q.61: What are the scratchers in these photographs, Mr. Wright?

A. I am assuming they are scratchers which had been made by the Weatherford Spring Company.

Q.62: Why do you make such an assumption?

\* \* \*

The Witness: I do not know of any other manufacturer of an appliance of this nature and at the time that these were recovered—at the time that this was recovered, rather. I have only one conclusion and that is it was manufactured by the Weatherford Spring Company.

\* \* \*

Q.63: (By Mr. Lyon): What time was this, Mr. Wright?

A. I will state that B & W did not make it.

Q.64: (By Mr. Lyon): What time was this, Mr. Wright?

A. These photographs are dated October 4, 1947, and at this moment I cannot recollect how much before this particular time I obtained the scratcher.

Q.65: You obtained these prints from the photographer, did you? [2644-342]

\* \* \*

The Witness: That is correct.

Q.66: (By Mr. Lyon): In the regular course of business? A. That is correct.

\* \* \*

(Deposition of Kenneth A. Wright.)

Q.67: (By Mr. Lyon): These prints, Exhibits 6Z-1 and 6Z-2, were dated when you received them, were they, Mr. Wright?

\* \* \*

The Witness: At this moment I cannot state whether the October 4, 1947, refers to the date of taking the picture, but that is my belief.

Q.68: (By Mr. Lyon): Well, my question was, the prints were so dated when you received them, is that correct? A. That is correct.

\* \* \*

The Witness: They were marked by the photographing company who did the work.

Q.69: (By Mr. Lyon): Do you recognize the scratcher [2644-343] shown in these photographs?

\* \* \*

The Witness: I believe the design of this scratcher is identical to that which Mr. Hall put into evidence during the period we took depositions in Houston and I find no material difference between that and this device here, which was purchased by B & W, from some supply company.

Q.70: (By Mr. Lyon): By this, which exhibit do you refer to?

\* \* \*

The Witness: And I believe that is Petitioner's Exhibit HHH.

Q.71: (By Mr. Lyon): Where was this well that you spoke of, Mr. Wright?

\* \* \*



(Deposition of Kenneth A. Wright.)

The Witness: This scratcher was obtained from a casing in a—which had been hauled from a well into a small yard adjacent to the operations down there.

Q.72: (By Mr. Lyon): What was the name of the operations?

\* \* \*

The Witness: It is my recollection at this moment that it belonged to the General Petroleum Corporation's yard. [2644-344]

Q.73: (By Mr. Lyon): Where?

\* \* \*

The Witness: In the Wilmington-Long Beach oil field area.

Q.74: (By Mr. Lyon): Now, did you ascertain how the scratcher in these photographs, Exhibits 6Z-1 and 6Z-2, had been used, if they were, by the General Petroleum Company?

\* \* \*

The Witness: Assuming it was the General Petroleum, and that is my present recollection, the liner had been pulled—or this particular casing had been pulled from a well.

Q.75: (By Mr. Lyon): And how deep was the well?

\* \* \*

Q.76: (By Mr. Lyon): If you remember.

A. I don't recall the depth and I am not certain whether I determined the depth.

(Deposition of Kenneth A. Wright.)

Q.77: Well, what is the depth of wells in that area?

\* \* \*

The Witness: To my knowledge, the wells vary in depth from the shallowest, 2400 feet, or approximately that figure, to 6,000 feet.

Q.78: (By Mr. Lyon): They don't have wells in that area [2644-345] of a depth of a thousand feet?

\* \* \*

The Witness: Not to my knowledge.

Q.79: (By Mr. Lyon): I note in the photograph, Exhibit 6Z-2, that substantially all of the wires are pulled from the ring collar and that some of the wires are twisted through the holes of the collar. Is that the condition of the scratcher when you found it in this yard, Mr. Wright?

\* \* \*

The Witness: With the exception that two loose wires on the inside, which can be more easily seen in the plan view, those are the wires which were picked up by me which fell out of the collar when it was cut in two and I took them and placed them in that position when the photograph was taken.

Q.80: (By Mr. Lyon): Were there any other wires there that could have been associated at any time with the scratcher in these photographs, Exhibits 6Z-1 and 6Z-2?

\* \* \*

The Witness: Not that I can recall at this time.

Q.81: (By Mr. Lyon): As pictured in the

(Deposition of Kenneth A. Wright.)

photographs, Petitioner's Exhibits 6Z-1 and 6Z-2, was there ever at any time any change made in any of the wires or the collar from the time that you found the collar and the wires in this yard at the General Petroleum Company, as you [2644-346] have testified?

\* \* \*

The Witness: I made no alteration whatsoever in any of the wires in any respect thereto except as I have testified, and what I mean by that is when these two individual wires which are entirely loose from the segments of the collar were taken by me to the photographer and placed in that position, as so shown by the photographs.

Q.83: (By Mr. Lyon): Did the collars or wires leave your possession at any time after you found them in the yard of the General Petroleum until you delivered them to the [2644-347] photographer?

\* \* \*

The Witness: I delivered them to the photographer myself and no one else had anything else to do with them.

Q.84: Does the picture portray exactly the condition of the scratcher collar and wires as you found them in the General Petroleum Company yard?

\* \* \*

The Witness: They do, with the exception——

\* \* \*

The Witness: ——of these two loose wires which I have mentioned heretofore.

(Deposition of Kenneth A. Wright.)

Mr. Lyon: I will offer in evidence at this time the two photographs Petitioner's Exhibits 6Z-1 and 6Z-2.

\* \* \*

Q.85: (By Mr. Lyon): Mr. Wright, were you at any time advised of the abandonment of the Hall application Serial No. 388891 prior to the receipt by you of the letter from the Patent Office, Exhibit 6W?

\* \* \*

The Witness: I was not.

Q.86: (By Mr. Lyon): Were you advised at any time prior [2644-348] to August 22, 1946, of the filing of the application Serial No. 627013?

\* \* \*

The Witness: I was not.

Q.87: (By Mr. Lyon): Were you ever consulted as to what should be in the application Serial No. 627013?

\* \* \*

The Witness: I was not.

Q.88: (By Mr. Lyon): Were you ever advised at any time with respect to any of the prosecutions of the application Serial No. 388891 from the time of this meeting with Mr. Hall on September 15, 1944, to and including the advice that you received from the Patent Office of the abandonment of that application, and that advice being as shown in Petitioner's Exhibit 6W?

\* \* \*

The Witness: I had no communication or advice

(Deposition of Kenneth A. Wright.)

whatsoever or information about that application during those periods, during that period.

Q.89: (By Mr. Lyon): Were you at any time advised with respect to the solicitation of any claim or claims in either of the applications 627013 or 55619 by Mr. Scofield or anyone acting on behalf of Mr. Hall?

\* \* \*

The Witness: I was not. [2644-349]

\* \* \*

Q.90: (By Mr. Lyon): Do you have any knowledge, Mr. Wright, as to when the claims purported to be claims 23, 24, and 31 of the Hall application Serial No. 55619 were solicited in that application or were placed in that application Serial No. 55619?

\* \* \*

The Witness: Would you mind rereading the question, Mac?

(Question read by the reporter.)

The Witness: I am a little uncertain as to what you mean, Mr. Lyon.

Q.88: (By Mr. Lyon): Do you know whether the claims were originally included in the application Serial No. 55619 as that application was filed?

A. I have no knowledge when those claims were inserted in that application.

Q.89: Do you know whether or not those claims

(Deposition of Kenneth A. Wright.)

were inserted in that application before January 27, 1950?

\* \* \*

The Witness: As I stated before, I don't know when they were inserted in that application.

Q.90: (By Mr. Lyon): Were you at any time asked or consulted with respect to the solicitation of the Claims 23, 24, and 31 in the application Serial No. 55619? [2644-350]

\* \* \*

The Witness: I was never advised or consulted in any manner about those claims, and I mean by "advised" prior to their insertion.

Q.91: (By Mr. Lyon): Were you ever advised with respect to the abandonment of the application Serial No. 627013?

\* \* \*

The Witness: You mean prior to its abandonment?

Q.92: (By Mr. Lyon): Prior to its abandonment.

A. No, I was not advised at any time.

Q. 93: Were you advised it was going to be abandoned? A. No, I was not.

Q.94: Were you asked whether it should be abandoned?

\* \* \*

The Witness: No, I was not.

Q.95: (By Mr. Lyon): You were present and heard testimony of Mr. Hall in Houston——

Mr. Scofield: When?

(Deposition of Kenneth A. Wright.)

Q.96: (By Mr. Lyon): ——in this matter?

A. I did.

Q.97: Did you at any time prior to hearing Mr. Hall's testimony understand that Mr. Hall thought that the tangential scratcher was no good? [2644-351]

\* \* \*

The Witness: Will you please read the question, Mr. McClure.

(Question read by the reporter.)

The Witness: I thought Mr. Hall thought that the tangential feature was the all-important feature.

Q.98: (By Mr. Lyon): By that you mean prior to hearing his testimony?

\* \* \*

The Witness: Prior to hearing his testimony.

Mr. Lyon: I think we will take a ten-minute recess at this time.

(A short recess was here taken.)

Q.99: (By Mr. Lyon): Mr. Wright, state whether or not you have observed the tracings made by the end of scratcher wires during the movement inside a steel casing under different conditions?

A. I have.

Q.100: Have you at any time with any scratcher ever seen under any test or under any operation a scratcher produce a spiral trace?

(Deposition of Kenneth A. Wright.)

A. I have never seen a scratcher produce a [2644-352] spiral trace.

Q.101: Do you recall when Mr. Decker was employed by B & W?

A. It is my recollection——

Mr. Scofield: That is objected to as immaterial and improper rebuttal.

The Witness: It is my recollection that B & W employed Mr. Decker about March of 1947.

Q.102: (By Mr. Lyon): Is Mr. Decker a patent lawyer? A. He was not; he is not.

Q.103: In the making of the wall cleaning guide and in the making of the first of the scratchers of that type, which as far as I understand it are those which are pictorially illustrated in the Jones & Berdine report did you have any tools, dies, or jigs made for the formations of those scratchers?

A. I am not certain which scratchers you are referring to.

Q.104: The three shown in the Jones—I mean those shown in the three different photographs, Figures 14, 18 and 26 in the Jones & Berdine report.

A. At the time these scratchers were made which are shown in the Jones & Berdine report, there was a die of a nature to form the clips, such as are seen on this device——

Q.105: Exhibit M? [2644-353]

A. ——Exhibit M, and there was also in existence at that time, I believe, according to my recollection, a die of some nature to make wires for



(Deposition of Kenneth A. Wright.)

one other size of scratcher other than 3½, and there were some fixtures which would be equally adaptable to making diameters of bands of more than one particular diameter, but as far as the actual bending of the wires for the 3½-inch scratcher, a simple jig was devised so that they would have a uniform pattern. To that extent, it was hand-operated, inasmuch as sixty or more of the wires had to be formed, and so they were handmade. As far as the forming of the wires, which includes the inner end, the arcuate section, the curved section with the radius which leaves the periphery and extends outwardly thereafter——

Q.106: I did not just get that. Just read me that last part of the answer.

(The last part of the answer was read by the reporter.)

The Witness: Those were made by a simple fixture or jig, whichever you elect to call it.

Mr. Scofield: You had better read the whole question and answer, if you will, please.

The Witness: For the 3½ inch scratcher supplied for the Jones test.

(The record was read by the [2644-354] reporter.)

Q.107: (By Mr. Lyon): Do I understand your testimony to be that this simple jig also formed the free ends of the scratcher wires, and by "free ends" I mean the ends of the wires beyond the

(Deposition of Kenneth A. Wright.)

are curve end of the wire where the wire passes out from under the clip?

\* \* \*

Q.108: (By Mr. Lyon): Do you understand my definition of free end of the wire, Mr. Wright?

A. I believe I do and I will ask you further, are you referring to this bend where I have placed my finger?

Q.109: Yes, is there any definite die or jig for forming that bend?

A. No, there was not.

Q.110: Was there any tool, die or jig formed for forming the bend in the free ends of the wires as they are shown in either Figures 14 or 18 of the Jones & Berdine report?

\* \* \*

The Witness: According to my knowledge there was not.

Q.111: (By Mr. Lyon): How were these bends in the ends of the wires formed——

\* \* \*

Q.112: (By Mr. Lyon): ——in the scratchers of the Jones [2644-355] & Berdine report as shown in Figures 14, 18 and 26?

\* \* \*

The Witness: According to my recollection they were formed out at the Domiguez Hill operation with pliers.

(Deposition of Kenneth A. Wright.)

Q.113: (By Mr. Lyon): Did you take part in that formation?

\* \* \*

The Witness: In part of them I did.

Q.114: (By Mr. Lyon): Were the same dies used in forming the clips for Exhibit M that were used for the formation of the clips of the scratchers in Figures 14, 18 and 26?

\* \* \*

The Witness: That I cannot say, for the reason that the time interval may have caused one to be worn out and another replaced, but it is identical in every respect.

Q.115: (By Mr. Lyon): Was there any difference in the way that the wires are held to the scratcher—

\* \* \*

Q.116: (By Mr. Lyon): —collar or on the outer periphery of the scratcher collar on Exhibit M than was true of the scratchers in Figures 14, 18 and 26?

\* \* \*

The Witness: None whatsoever.

Q.117: (By Mr. Lyon): I note in the scratcher wires on Exhibit M that there is a certain amount of freedom or flexibility of the wires. Was or was that not [2644-356] true of the scratchers of Figures 14, 18 and 26 of the Jones & Berdine report?

\* \* \*

(Deposition of Kenneth A. Wright.)

The Witness: The wires of the scratchers in the Jones & Berdine tests were flexibly mounted and free to flex around the periphery beneath the clips.

Q.118: (By Mr. Lyon): Was that different in any way from the manner in which they are mounted in Exhibit M?

\* \* \*

The Witness: None whatsoever.

Q.119: (By Mr. Lyon): Mr. Wright, have you observed B & W's scratchers under actual operation, being run into a well?

A. Yes, I have, with the limitation that observations stops, visual observation that is, when they pass into the casing of the well and are immersed in the drilling fluid of the well.

Q.120: You have been on actual operations with B & W scratchers on many occasions, have you not?

A. I have, and which scratchers are you referring to?

Q.121: Well, all three of them.

A. I have been present when all——

Q.122: That is, the Nu-Coil, the Multi-Flex and the wall cleaning guide? [2644-357]

A. That is correct.

Q.123: And you have also had considerable experience on drilling rigs prior to your going into the business of manufacturing scratchers, have you not? A. In my opinion, I have.

Q.124: In fact, since you left college you ex-

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pended all of your working hours in the petroleum industry, haven't you?      A. That is correct.

Q.125: How old are you now?

A. 55 years old.

Q.126: When did you leave college?

A. 1921, June of that year.

Q.127: There has been considerable said in this case——

A. May I make an exception, that I have done some geological work in Australia, at which time I was not actually drilling a well or close to the actual operations of drilling a well.

Q.128: For how long a period was that?

A. Somewhere between two and three years. I don't recall the period.

Q.129: There has been considerable testimony given here with respect to casing rotation. Will you state your observations and experiences with respect to casing rotation, both with and without scratchers, centralizers or [2644-358] scratchers and centralizers?

A. Well, I will respond to that question by first asking you: You do not mean the rotation of casing during the cementing by the rotation method and——

Q.130: No.

A. ——and accompanied by the use of rotary scratchers; is that correct?

Q.131: That is correct, eliminate the rotary scratchers and rotation method of cementing.

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A. It has been my observation through actually being present on the rig floor on a great number of wells that every string of drill pipe or casing which is run into either the drill pipe or casing, which can be in some cases a quarter of a turn throughout the lowering of an 80-foot stand or a complete revolution, followed later by a stand or two with practically no observable rotation, followed thereafter by other rotation, maybe in an opposite direction, and so on until bottom is reached. The same holds true for casing lowered into the well, and I will identify that particular casing as being bare of any additional equipment other than the casing shoe or float shoe, which is customary in practically all cement operations. When scratchers and/or centralizers are mounted on the casing this same general pattern holds true; the observation is, the angular reversals and the direction [2644-359] of the particular course of the well at any particular point influencing this rotational movement of the drill pipe or casing, and that there is no relationship, in my observation, between the presence of scratchers on the casing with this rotational movement whatsoever.

Q.132: Has this fact of casing rotation been the subject of any particular development in oil wells, Mr. Wright?

A. I do not quite understand your question, Mr. Lyon.

Q.133: Has the fact of rotation of a string of casing or pipe in being run into or out of a well

(Deposition of Kenneth A. Wright.)

been the subject of any particular development with respect to oil drilling or orientation?

A. Do you have reference to the running of the drill pipe?

Q.134: Casing, pipe casing or drill pipe, any one of the three.

A. I am sorry, I have to repeat I still don't quite understand your question.

Q.135: Well, has the fact of rotation, of pipe rotation, on going into the well, been the subject of any particular development or problem in oil well drilling or oil well surveying, or anything of that character?

A. Well, the course of the bore hole [2644-360] and its deflections have been the subject of study starting many, many years ago, even to the point of going back to 1878. There were people securing patents on attempts to devise devices to survey a bore hole, and the amount of deflection of these rotary-drilled holes was of a nature and an amount that was hard to believe when we in the industry started closer spacing of wells and found that wells of substantial distance apart on the surface communicated with each other, and that made the proof, which is irrefutable, and this was followed by the development of surveying instruments which did accurately survey this course, and the people then understood more about this problem.

But all of the holes drilled, it was generally conceded, have numerous reversals in any particular course, and it is just the case of holding it to a

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stated minimum and the operator decides what that minimum shall be and drills his well accordingly. Then the placing of the casing in that well, of course, follows the actual drilling and the rotary observations and the observations of the turning of the casing where it is lowered in are not considered to be anything of—anything unusual or anything more than that in the ordinary course of development of the well.

However, if I understand your question, possibly you might be referring to Mr. Paul's [2644-361] assertions about this movement being induced by the placing of the equipment which he mentions on the casings to be placed in the well. Is that what you were referring to?

Q.136: Well, I was particularly referring to this, Mr. Wright: State whether it is or is not true that the arc with respect to well surveys deals extensively with the problem of orienting the amount of pipe rotation with reference to the survey being made?

A. That is correct. The Anderson survey, which was the original one developed and still the principle method, is predicated on the fact that they carry the orientation into the well, which means the observations in cumulative angular movement throughout the lowering into the well of the instrument. Otherwise than that, the survey would not be accurate.

Q.137: And the surveying art teaches, does it not, that when the survey is made that without such



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orientation and determination of the amount of pipe rotation that a survey of the well cannot be made?

A. That is correct.

Q.138: And that is a survey of rotation of the pipe on which nothing is mounted, is it?

A. There is a survey tool positioned on the lowermost end of the drill pipe which is lowered into the well. That instrument is housed in a casing of the [2644-362] diameter about the size of the lowering end string.

Q.139: Is there anything in that added instrumentality in the casing which would induce a complete rotation?

A. None whatsoever, and it is very expertly engineered.

Q.140: There have been considerable statements made throughout the record with reference to hole irregularity, and by that I mean of the drilled hole, and the so-called enlargements of the hole diameter and in that regard we have made reference to certain well surveys as set forth in the Teplitz report, which is in evidence as Exhibit 5G.

Mr. Scofield: 5 what?

Mr. Lyon: G.

Q.141: Have you made any study at any time of such hole irregularities as shown by such survey, Mr. Wright?

\* \* \*

The Witness: I have observed and been shown by engineers of oil companies considerable numbers

(Deposition of Kenneth A. Wright.)

of caliper surveys and I have observed the one or more which are in the Teplitz report of 1946.

Q.142: (By Mr. Lyon): What is the character and extent of the irregularities which occur in an ordinary oil well, and have you had prepared any chart or diagram or tracing which is illustrative of the intensity of such [2644-363] diameter changes, Mr. Wright?

\* \* \*

The Witness: The actual diameter of the bore hole is an extremely variable thing and will depend upon many, many factors. The best answer which might be applied I think is to take any particular survey and study it and make the observation from it, and I have studied the caliper survey which is seen in the first diagram or first figure, I believe, of the Teplitz report, and if you will place one before me, I will be certain I am talking of the correct one.

\* \* \*

Mr. Lyon: 5G.

Q.143: I hand you the photostatic copy of the Teplitz report, a photostatic copy of which is in evidence as Exhibit 5G, and I ask you to look at this and see if this is the report that you referred to, and the figure that you referred to in that report.

A. The report which I have before me is titled "an Investigation of Oil Well Cementing," the authors being H. A. Teplitz of the Gulf Research & Development Company, and W. E. Halliburton, of

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the Halliburton Oil Well Cementing [2644-364] Company.

This photostat was taken of pages of the Petroleum Engineer Reference Annual for 1946. It is to be noted further that at the bottom of the first column on page 114, where this article starts, is stated the following:

“Presented before Southwestern District, API, Division of Production, Shreveport, Louisiana, May 17-18, 1946.”

Turning to page 116, we find Figure 1, and on the left-hand portion we find the depths recorded in this figure followed by the electric log and then the observations by the authors as to what formations existed, at those depths. There is also a notation with reference to the caliper log dimensions by inches and a vertical dotted line which states “Bit size  $9\frac{7}{8}$ .”

There is additionally noted on this particular figure the notation: “Perf.” underneath which there is a little symbol indicating what I understand, and the text confirms, that this abbreviation refers to perforations made in the casing cemented in the well, and that these perforations are made between the depths of 9560 and 9574. From this——

Q.144: Just a moment, Mr. Wright, I don't want to interrupt your thought there, but I want to get a little something on the scales of this plitting which is in the [2644-365] figure you are referring to. The vertical scale of this clock is in hundred feet, is it not?           A. That is correct.

(Deposition of Kenneth A. Wright.)

Q.145: And the horizontal scale is in five feet—five inches, is it not. No, it is fifteen inches, is it not?

\* \* \*

The Witness: There is present—

\* \* \*

The Witness: Continuing on, I would note that vertical scale is provided in terms of hundreds of feet. The lateral scale with reference to the diameter is provided, and the interval between five inches, ten inches, and fifteen inches is shown so as to provide a reference point, and together with this is the base line previously mentioned as the dotted line referring to the bit size of  $9\frac{7}{8}$  inches.

Mr. Scofield: The 5, 10 and 15 inches only has to do with reference to the caliper log?

The Witness: That is my understanding, and it is so noted and indicated in this Figure 1.

Q.146: (By Mr. Lyon): The point that I was making, Mr. Wright, is that each square vertically is made to represent 100 feet and horizontally 15 inches.

A. That is correct. With the Figure No. 1 in this [2644-366] report as a basis for the study, it will be noted that with reference to the bit size used to drill the hole into which subsequently was lowered this instrument known as a caliper survey which provided the observations which are represented by this line shown on this report—

(Deposition of Kenneth A. Wright.)

Q.147: The bit size was what, what typical bit size?

A. The bit size noted here is  $9\frac{7}{8}$  inch. Now, it can be noted from this caliper survey that there is a hole approximately 15 inches in diameter, and that there is a hole which might be as low as maybe  $9\frac{1}{4}$  inches. Inasmuch as this particular scale is very condensed, it would make a more accurate determination difficult, and because of that I have had this particular Figure 1 enlarged by photostatic means to an intermediate size, and after having arrived at this intermediate size have selected what I term to be a critical portion of this particular well, and it contains the—or is directed to that particular area above where the perforations were made and include that area or vertical section where the perforations were made. [2644-367]

\* \* \*

Q.148: (By Mr. Lyon): Go ahead, Mr. Wright.

A. At this particular stage of the enlargements it is possible to do more careful work in terms of providing a center line through this black——

Mr. Lyon: Just before we get further, so that this matter will be of record, I will ask that the intermediate enlargement be marked for identification as the Petitioner's Exhibit 7A.

Mr. Scofield: That is a blow-up of Fig. 1.

The Witness: That is correct.

(The intermediate enlargement referred to was marked by the Notary Public as Peti-

(Deposition of Kenneth A. Wright.)

tioner's Exhibit 7A for identification, and made a part of this deposition.)

Mr. Lyon: And I will ask that the greater enlargement Mr. Wright has produced be marked as Petitioner's Exhibit 7B for identification.

(Enlargement referred to was marked by the Notary Public as Petitioner's Exhibit 7B for identification and [2644-368] made a part of this deposition.)

Mr. Scofield: What is that, the caliper section of 95-9600?

The Witness: It is the area immediately below——

Mr. Lyon: It is the caliper section, yes.

The Witness: Immediately below 9400, and extending beyond the point 9754, those figures representing its depth.

Mr. Lyon: I will offer these two exhibits at this time for the purpose of illustrating the witness' testimony.

\* \* \*

The Witness: As previously stated, the purpose of this was to provide a basis from which to accurately depict by graphic means or chart just what angles exist in the profile of a well wall such as, and in particular this particular well, and inasmuch as this particular report and this has been featured in this series of depositions it was thought to be as good an example as might be provided to show

(Deposition of Kenneth A. Wright.)

what angles do exist in a well which might be, for the purpose of this discussion, called "typical," and I mean by "angles," I mean in the vertical section. Now, off the record. [2644-369]

\* \* \*

Q.149: Last evening, Mr. Wright, you were testifying concerning the variations of diameter of a well bore and I believe had made reference to Figure 1 of the Teplitz report, and had made certain statements with reference to that figure and the development of the contours as shown in that figure.

You have before you now a machinery device which I will ask the reporter to mark as Petitioner's Exhibit 7C for identification.

\* \* \*

Mr. Lyon: In this machine there is a tape, which I believe is about 160 feet long or 140 feet long, and I will ask that that tape also be marked [2644-371] separately as Petitioner's Exhibit 7D for identification and so that we may know where the marking is, I will run this thing until I find a point to mark the tape. Mark the tape at the depth indicating 9470 feet, which I have run to the observation position in the machine.

(Tape referred to was marked by the Notary Public as Petitioner's Exhibit 7D for identification, and made a part of this deposition.)

Q.150: (By Mr. Lyon): What is this machine



(Deposition of Kenneth A. Wright.)

or device and this tape which have been marked for identification as Exhibit 7C and 7D, Mr. Wright?

A. This machine, which was built under my supervision and instruction, is a device with spools at either end to which are attached handles—wheels, which are provided with handles. They are at opposite ends of the framework of the machine, and on these spools is placed a broad tape of paper.

Q.151: That tape is Petitioner's Exhibit 7D?

A. That is correct, and the paper is of a length and of a width to duplicate by exact scale what may be viewed in the vertical section of the hole found in Exhibit 1—correction, Figure 1 of the Teplitz & Hassebrook report; that is to say, these—strike “these”—this graph found on the left-hand column of Figure 1 [2644-372] had a portion which I mentioned yesterday selected and reproduced to true scale, just as it would be in the well itself.

Q.152: When you refer to this report, the Teplitz report, it might be helpful in the record if you would at the same time give it the exhibit number, which is 5G, Mr. Wright.

A. I will attempt to hereafter. I believe I stated yesterday that the portion selected to reproduce at this true to scale was that portion starting about 9430 and extending to 9600. I will state additionally that in that 170 feet between those two depths is found a diameter equal to the maximum found in the entire log, which is shown in that Figure 1 report, Figure 1 5G report, and contains



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the critical section which is that vertical section which the operator selected to perforate the casing after the cementation in order to complete an oil well.

So, in developing this machine and the tape, it starts with the observation that in the left-hand part of Figure 1 there is observed, as I stated yesterday, the section by inches, 5, 10 and 15, so that true readings in terms of inches or fractions thereof can be noted. Now, I have provided or placed in your custody yesterday two intermediate enlargements, and I would like for them to be given me at this time. [2644-373]

Mr. Scofield: You might indicate what that 5, 10 and 15 inches shows, Mr. Wright, just to simplify the cross-examination.

The Witness: Were these in your custody last night, Mr. Scofield?

Mr. Scofield: I haven't seen them.

The Witness: As previously stated, this part of the figure states at the top, 5, 10 and 15 inches, and is to provide the reader, or anyone who cares to make observations, with a method or reference with which to determine what the true diameter of the well would be at any point in the depth he might select to make that observation. The observed section, that is, in its lateral plane of reference, is that part of it from 5 to 10 inches, so by progressive upward photostating, I have provided this chart, Petitioner's Exhibit 7B, which by photostatic proc-

(Deposition of Kenneth A. Wright.)

esses provides the black line running vertically beneath the Figure "5" and the Figure "15" as a true five inches by actual measurement on this exhibit. 7B as five linear inches. Inasmuch as the "5" to "15" represented 10 inches, then half thereof would be a radius measurement in that the relationship between diameter and radius is two to one, or the radius is one-half of the diameter.

Then, by taking the  $9\frac{7}{8}$ -inch line which is provided in the graph, which is the size—which is [2644-374] the point at which the bit would provide a constant vertical line if it were drilled to the true diameter of the bit, and using that as a reference line, it is possible to take observations by straight linear measurements on this Exhibit 7B and plot that onto this tape and to provide at the same time on the tape the center line of the hole.

This machine has at the right and left the notation in print "Center Line of Hole." Beneath that is found on either one of these two pieces of cloth tape provided to write on the printing "The Drilled Diameter," which is this  $9\frac{7}{8}$ -inch reference point found in these exhibits. That is a purple line. The black line found near it is a transferring onto this tape of the observations made at the various points in the vertical section between the depths 9430 and 9600.

Now, this permits direct reading without any computations whatsoever, and the object of this tape was to permit one to stand at the end, and that

(Deposition of Kenneth A. Wright.)

means either end and roll this tape either upward or downward (indicating) and actually observe the true angles which the profile of the well contains, and at the same time reproduce, as I have stated before, the true dimensions.

Now, it can be seen from this Exhibit 7B that in the area of 9450 that the hole approximates just under [2644-375] 15 inches in diameter, which would be a radius of just less than  $7\frac{1}{2}$  inches, so if we will turn this tape to the area about 9450, in that region (indicating)—slightly above it is my estimate—it can be seen that this scale reads  $7\text{-}7/16$ ths. Twice that would be  $14\frac{7}{8}$ , and if we take, as I have, the center line, which is this broad black line, for the reference point, then you can see that there is within the limits of accuracy provided by these exhibits a true reading of the diameter existing at that point.

Then if we further observe that in the area adjacent to 9500 feet the diameter of the hole changes from less than bit diameter to greater than bit diameter, we will test the machine for accuracy. It will be noted that there is a point above 9500 where it goes from greater diameter to lesser diameter, as well.

I am now rolling the tape in what might be termed to a greater depth in the well, and if Mr. Scofield cares to, he can stand——

Q.153: (By Mr. Lyon): You are rolling the tape from right to left?

(Deposition of Kenneth A. Wright.)

A. At 9480 it is observed that the true edge of the hole is approaching the line of bit diameter. It has crossed it in the area just below where the 9480 region goes to a point, proving that the observed diameter [2644-376] is less than bit diameter.

Q.154: By how much is it less than bit diameter?

A. The observed radius is slightly under  $\frac{1}{8}$  inch, showing that the diameter of the hole is approximately  $\frac{1}{4}$  inch less than the——

Q.155: Referring to the Teplitz report——

\* \* \*

Q.156: (By Mr. Lyon): Mr. Wright, with reference to this smaller diameter section, is it possible to determine from the Figure 1 of the Teplitz report, Exhibit 5G, the character of the hole at this point of smaller diameter?

\* \* \*

The Witness: I would like to have you more properly define what you mean by "character," or shall I presume you are referring to observations to include bit diameter and the electrical [2644-377] log? A. Is that the——

\* \* \*

The Witness: ——the substance of your question?

Q.159: (By Mr. Lyon): I mean, frankly, is there anything which indicates what the strata of

(Deposition of Kenneth A. Wright.)

the hole is at the point where the hole is smaller in diameter than the bit you have just referred to?

\* \* \*

The Witness: Figure 1 of Exhibit 5G contains the electrical log and the author of that paper's own decision or conclusion of what formations were existent at that point or in the vertical section of the well.

Q.160: (By Mr. Lyon): What was the well formation at the point that you have just discussed, that is, the neighborhood of 9480 to 9500 feet?

\* \* \*

The Witness: It is possible, and I do read from the Figure 1 that that particular section is indicated as starting with sandy shale and passing into sand, and the sand continues for a small amount of vertical distance below the 9500 foot mark, or that is as reasonably close as you can determine from the small graphs.

Q.161: (By Mr. Lyon): Is that a porous structure? [2644-378]

\* \* \*

The Witness: That is a permeable strata upon which filter cake is deposited.

Q.162: (By Mr. Lyon): Then what is the material which has caused the decrease in diameter of the hole at the point under discussion?

\* \* \*

The Witness: It can only reasonably be con-

(Deposition of Kenneth A. Wright.)

cluded that it is most likely a result of filtration of the fluid into the permeable strata, leaving a deposit of filter cake on its sides, and as the continued deposition takes place the filter cake becomes thicker, not thicker in viscosity but thicker in its dimension.

Q.163: (By Mr. Lyon): Where sand is indicated, is there any particular meaning of sand in the petroleum industry?

\* \* \*

The Witness: Yes, a large part of the reservoir rocks of the world, in terms all related to the oil field, find their productive section in the sands. There are gas sands, water sands and oil sands present in a great number of wells.

Q.164: (By Mr. Lyon): Now, in this chart that you have produced, Exhibit 7D, there is a further section that I desire to point out at this time, and that is the section which is somewhere in the neighborhood of 9560 [2644-379] feet, and in that area there is indicated on this Figure 1 the word "p-e-r-f," with a period inside of the channel. What does that indicate?

\* \* \*

The Witness: I believe I did refer to this particular section, and stated that "p-e-r-f" is an abbreviation for "perforation," and if you would like me to I will find in the text that Exhibit 5G the statement that perforations were made in the casing at this particular point.

(Deposition of Kenneth A. Wright.)

Q.165: (By Mr. Lyon): Will you do that, and the text you are referring to is the text of Exhibit 5G?

A. That is correct. In compliance with your request, Mr. Lyon, I find on page 114 of Exhibit 5G in the paragraph No. 2—strike that—column No. 2, in the paragraph which contains the Figure 1 in parentheses, and midway down in that paragraph the following: “The casing was then perforated from 9560 to 9574.” In column 3 of that same page, starting with the second paragraph found in that column, I find the following: “Figure 1 shows some of the logs made during the test. A section of the surveys in that part of the hole which is of minor interest has been removed to conserve space. Also for condensation, the original gamma ray log has been omitted, and the differentials between it and the radioactivity logs [2644-380] obtained after casing cementation and the squeeze jobs are presented reduced to one-tenth horizontal scale.” That is the end of the quotation from the Exhibit 5G, so that I can find confirmation in the text of what I have stated heretofore.

Q.166: What was the character of the formation opposite this point of perforation that you have just referred to?

\* \* \*

The Witness: It can be found by reading directly from the Figure 1 that the authors decided that there was sand at that section of the well op-

(Deposition of Kenneth A. Wright.)

posite the area or vertical section where they made the perforations.

Q.167: (By Mr. Lyon): Was there or was there not also shown on that chart a decrease in diameter in well bore at this point?

\* \* \*

The Witness: That is correct, and I would like to add further that it is indicated that it was either oil or gas sand at the particular section where they made the perforations.

Q.168: (By Mr. Lyon): Looking at your enlargement Exhibit 7B——

A. May I interrupt you for the moment?

Q.169: Yes. [2644-381]

A. It should be noted that reading after the sentence which determined the preparation section that the wording is as follows: "and when the well was produced it was found to have an abnormally high gas-oil ratio for this particular sand," and I wish that read into the record to confirm the observation that it was a productive section of the well.

Q.170: Mr. Wright, can you tell from Exhibit 7B the point of quickest change in well bore diameter——

\* \* \*

Q.171: (By Mr. Lyon): ——as shown by this caliper survey?

A. Well, I would say there are two or three places in the vertical section where rapid changes



(Deposition of Kenneth A. Wright.)

occur, and the enlarged—greatly enlarged diameter above approximately 9480 had abrupt changes from maximum diameter to below the bit diameter and——

Q.172: You said “about 9480” was one such point?      A. I said above that point.

\* \* \*

Q.173: (By Mr. Lyon): You said “above that point”? Will you point out from this chart Exhibit 7D that point just above 9480? Just roll it to that point.

A. In the area of 9480, as previously stated, the diameter changes from beneath or below bit diameter [2644-382] to greater than bit diameter.

Q.174: Now, I want to get this point, and I am putting a finger on a point which I will mark on Exhibit 7B with the word “point,” and I want you to find that point on this Exhibit 7D?

A. I will make this observation, that starting with this Exhibit 5G and photographing up and having a tape this long, you cannot find an exact foot mark. It is, as I have qualified it each time, in the area about 9480 feet.

Q.175: There is a point of maximum deviation——

A. Which would be, according to this, in this area here.

Mr. Scofield: Let the record show——

Q.176: (By Mr. Lyon): Closest to the line somewhere.

(Deposition of Kenneth A. Wright.)

Mr. Scofield: Let the record indicate that counsel is pointing to the tape which is in the machine.

Mr. Lyon: That is right.

Q.177: Now, in order that we may understand this tape, there are major vertical lines in the tape, which I believe are 1 inch apart, are they not?

A. That is correct.

\* \* \*

Mr. Lyon: What relationship does that 1 inch have to the actual plotting on this tape, is that an inch or is that a scaled inch? [2644-383]

The Witness: That is true to scale. The observations here will provide you with true readings.

Q.178: (By Mr. Lyon): The point on the tape which is in front of us shows changes of maximum deviation from the drilled diameter, and as I read it is—— A. Somewhere in this area.

Q.179: Is somewhere in this area?

A. Please don't mark it.

Q.180: Yes, I will mark it. That I have marked with a bracket and also with the word "point."

Is it or is it not approximately the same as the position that I marked "point" in Exhibit 7B?

A. I believe it is.

\* \* \*

The Witness: I believe it is, but I will confirm it. I believe it is, and your question is the diameter at that point?

Q.181. (By Mr. Lyon): What is the diameter at that point?

\* \* \*

(Deposition of Kenneth A. Wright.)

The Witness: The observation made is that the radius at that point is slightly below  $6\frac{1}{2}$ , indicating at diameter of just under 13 inches.

Q.182: (By Mr. Lyon): In the ten feet of this tape from [2644-384] 9480 back to 9470 there is a wall diameter deviation of how much?

\* \* \*

Q.183: (By Mr. Lyon): Just measure between 9480 and 9470.

A. Mr. Lyon, I would point out to you that in this vertical scale here you are only approximating the depths, and it is your contention then that that is 9465 or some——

Q.184: I don't know what that point is. I didn't get near that point. That is a point of deviation, another point of maximum deviation. I just asked you to measure the well diameter on this chart at 9480.

\* \* \*

The Witness: At 9480?

Q.185: (By Mr. Lyon): Yes.

The Witness: The observed diameter from 7C is that at 9480 a radius exists of  $5\frac{3}{4}$  inches—no, it is about a  $16/32$ nd below that, which would make a diameter of about—of twice that figure.

Q.186: (By Mr. Lyon): Which is approximately  $11\frac{1}{2}$  inches, is that correct?

A. That is correct.

Q.187: Now, go back to 9470 and make the same measurement for me. [2644-385]

\* \* \*

(Deposition of Kenneth A. Wright.)

The Witness: At 9470 the observed diameter is just below  $5\frac{1}{2}$  inches by at least a 32nd.

Q.188: (By Mr. Lyon): So that is 11 inches, approximately? A. That is correct.

Q.189: So that between the point of 9470 and 9480 the deviation in the well diameter was from a minimum of 11 inches to a maximum of 13 inches and back to a little less than——

A. A little less than 11 inches.

Q.190: A little less than  $11\frac{1}{2}$  inches?

\* \* \*

The Witness: Twice  $5\frac{1}{2}$  is 11.

Q.191: (By Mr. Lyon): Yes, but twice  $5\frac{3}{4}$  at the other end was a little less than  $11\frac{1}{2}$ , so there was a maximum deviation in that 10 feet of well of approximately an inch and a half, is that correct?

A. Approximately, that is correct, yes.

Q.192: And is that, according to your observation, a fair illustration of well bore diameter deviation, Mr. Wright?

\* \* \*

The Witness: Well, my reply to that would be that I have seen a great number of caliper logs and there is extreme difficulty in ever determining any individual [2644-386] pattern. It takes several diameters in any one field to establish even an average pattern.

Q.193: (By Mr. Lyon): I am not asking you for a pattern; I am asking you, is this a typical

(Deposition of Kenneth A. Wright.)

magnitude deviation in a well bore as you have observed them?

\* \* \*

The Witness: That amount of deviation can be found in a great number of wells.

Q.194: (By Mr. Lyon): Well, is that typical of the amount of deviation?

\* \* \*

The Witness: If it is found in a great number of wells, it is my conclusion it is typical.

Q.195: (By Mr. Lyon): Have you any further observations that you desire to make with reference to Exhibits 7C and 7D?

\* \* \*

The Witness: I don't believe I placed on the record all that might be said for the diameters existent as observed by the hole caliper device in the area from 9560 to 9574.

Q.196: (By Mr. Lyon): All right, if you have something further to say with respect to that, why, do so. [2644-387]

\* \* \*

The Witness: I have rolled the tape to where the depth 9560 is before me and I will make an observation of the recorded diameter as indicated by the hole caliper instrument at that point. As close as can be read, the radius is  $4\frac{3}{4}$  inches and twice that is the diameter which is recorded. Turning the tape further to 9570, the observed radius is about a thirty-second under  $4\frac{3}{4}$  inches and therefore the

(Deposition of Kenneth A. Wright.)

diameter existent at that point would be twice that.

At 9574, which is the point opposite the lowermost perforation previously mentioned, the observed diameter is 1/16th over  $4\frac{3}{4}$  inches, and twice that would be the diameter existent at that point as observed by the device called the hole caliper device.

I believe at one time I made reference to the purpose of this machine, which is for the most part to provide a visual demonstration or exhibit of the actual profile of the well to test for the theory of obstructions and the relative diameters existent over that vertical span. I believe that covers most of the observations.

Mr. Lyon: I will offer in evidence at this time for the purpose of illustrating the witness' testimony, Exhibits 7C and 7D. [2644-388]

\* \* \*

Q.197: (By Mr. Lyon): Mr. Wright, are you a Registered Professional Engineer of the State of California?

A. I am a Registered Professional Petroleum Engineer of the State of California.

Q.198: Your State of California registration card being 11789, is that correct?

\* \* \*

The Witness: On my certificate, as supplied me annually by that Department of the State of California, is observed the No. 11789, the abbreviation "P.E.," meaning Petroleum Engineer, and after

(Deposition of Kenneth A. Wright.)

that the No. 660, which indicates that in this particular section of professional engineering I am No. 660.

Q.199: Mr. Wright, there has been some question in this proceeding with reference to the proper gauge of the wire used in these scratchers. In what range of wire sizes do you know that there are scratchers that are now being used?

\* \* \*

The Witness: In our company, that is to say B & W, we have used 14-gauge wire, and I would make the observation that Mr. Hall for a short period—and a very short period, according to my understanding—used 15-gauge and then went to 14-gauge. There is today on the market [2644-389] a scratcher made by another company, a manufacturer who——

Q.200: (By Mr. Lyon): What manufacturer?

A. Baker Oil Tool, Incorporated's scratcher, having a smaller wire, and it is my recollection that the wires are 16-gauge, which would have a thickness or diameter of about 62 thousandths of an inch.

\* \* \*

Q.201: (By Mr. Lyon): Is the Baker scratcher an inside- or outside-mounted wire scratcher?

\* \* \*

The Witness: It is my observation that the wires are fastened or secured on the inside of the collar.

Q.202: (By Mr. Lyon): Had you seen the scratcher of that type before January 27, 1950?

\* \* \*

(Deposition of Kenneth A. Wright.)

The Witness: My present recollection is that I had.

Q.203: (By Mr. Lyon): Where?

A. In the Baker Oil Tool Company's shop in Huntington Park.

Q.204: Was that scratcher of the inside-mounted type? A. That is correct. [2644-390]

\* \* \*

Q.205: (By Mr. Lyon): We have the Baker scratcher here. How did the scratcher which you saw at the Baker Oil Tool Company's shop before January 27, 1950, compare with the scratcher which you have here in the room?

\* \* \*

The Witness: If you will place the same scratcher before me I will make the observations.

Mr. Lyon: The pin fell out. Here is the missing pin.

The Witness: Is there a question before me?

Q.206: (By Mr. Lyon): Yes. How did the one that you saw before January 27, 1950, compare with this scratcher?

\* \* \*

The Witness: It is my recollection that it is identical. There might have been a slight difference in the length of the wires, but otherwise it appears to me to be identical.

Mr. Lyon: For the purpose of illustrating the witness' testimony, I will offer in evidence the Baker



(Deposition of Kenneth A. Wright.)

scratcher as Petitioner's exhibit next in [2644-391] order.

\* \* \*

A. It is my present recollection that the hinge structure was a little bit different.

Q.208: In the one you saw before January 27, 1950, as compared to Exhibit 7E, is that what you mean? A. That is correct.

\* \* \*

Q.209: (By Mr. Lyon): In Exhibit 7E, there are coil springs formed in the wires?

A. That is correct.

Q.210: State whether or not those coil springs are inside the collar? A. They are.

\* \* \*

Q.211: (By Mr. Lyon): Do the wire fingers all extend out through holes on the collar? [2644-392]

\* \* \*

The Witness: May I make the notation that I did not reply to your previous question because Mr. Scofield introduced an objection and interfered?

Q.212: (By Mr. Lyon): Pardon me, I thought you did. Answer both of them, then.

A. It is my observation that there are coil springs in these wires and that the wires extend through holes, and I am speaking of the wire fingers.

Q.213: And the coil springs are mounted inside the collar, are they?

\* \* \*

(Deposition of Kenneth A. Wright.)

The Witness: That is correct.

Q.214: (By Mr. Lyon): State whether or not the coil springs are housed in a deformation of the collar?

\* \* \*

The Witness: The wires are positioned in corrugations in the collar and the corrugations make what might be termed an annular ring.

Q.214: (By Mr. Lyon): In these respects is this scratcher the same as the one that you saw prior to January 27, 1950?

\* \* \*

The Witness: According to my present recollection, it is the same, with the exceptions that I have previously stated. [2644-393]

Q.215: (By Mr. Lyon): You were present and heard the testimony of Mr. Barkis with reference to the rotation of these scratchers, is that correct, Mr. Wright?

A. I was present when he testified in that respect.

Q.216. Do you agree entirely with Mr. Barkis' statement with reference to the rotation of the scratchers?

\* \* \*

The Witness: I do.

Mr. Lyon: We will take a recess at this time of ten minutes.

(A ten-minute recess was taken.)

Q.217: (By Mr. Lyon): Mr. Wright, I hand

(Deposition of Kenneth A. Wright.)

you a catalog, bronze covered, of B & W, Incorporated, and ask you if this is one of your catalogs, and if by reference to the back page you can determine the date it was published approximately?

A. The catalog that you have handed to me is a catalog of B & W, Incorporated, and I find on the back cover page the following notation "Made in U.S.A." followed by "20M-1-52," indicating it was printed in 1952 in the month of January.

Q.218: There is a machine illustrated on the third page in the upper right-hand corner in this catalog. What [2644-394] is that machine?

A. On page 3 of this catalog in the upper right-hand corner is a cut of a machine which was developed by B & W to test centralizers, and is hydraulically operated, meaning by that the motions or movements are actuated by hydraulic pistons.

Q.219: When was that machine developed?

A. I do not recall whether it was 1950 or 1951, but that is my recollection at present, one of those two years.

Q.220: Is that machine known as a "centralizer testing machine"?

A. That is correct.

Mr. Lyon: I will ask that the catalog which I exhibited to the witness be marked as Petitioner's Exhibit 7F in evidence. [2644-395]

\* \* \*

## DEPOSITION OF J. E. HALL, SR.

Jesse E. Hall, Sr., being duly sworn, deposes and says, in answer to interrogatories proposed to him by Thomas E. Scofield, counsel for applicant, as follows:

## Direct Examination

Q.1: State your name and residence?

A. J. E. Hall, Sr., 900 Lamar Street, Weatherford, Texas.

Q.2: Are you the Mr. Jess Hall who is the applicant for an application for a patent, No. 67013, that is concerned in this proceeding? A. I am.

Q.3: What is your understanding of this proceeding, Mr. Hall?

A. My understanding of this procedure is a hearing for public use, testimony for public use, also testimony whether I fraudulently filed an oath for patent application.

Q.4: What are the public uses that are involved, as you understand it?

A. Public uses that are involved in this case is uses, first, of the Jones and Berdine Test that was run in the fall of 1939, Dominguez Hills, [2647-1] California.

Q.5: Any other?

A. And the Jones and Berdine paper that was given in the spring meeting of the A.P.I. in Los Angeles, and Thomas Kelley & Sons oil well that was drilled—on the completion of that well, that was finished in January, 1940. I believe that is about all.

(Deposition of J. E. Hall, Sr.)

Q.6: My questions will first be directed to the Kelley well use, and in that connection I would first like to ask you, what was your first knowledge of the Wall Cleaning Guides that were made by B & W, Inc.?

A. My first knowledge was in the month of November, 1939. They were being run in the test in these Jones and Berdine simulated wells in Rosecrans, California. That Dominguez Hills, they are all there close together.

Q.7: Were the scratchers you saw run in the Jones and Berdine tests the scratchers that you saw later offered by B & W, Inc.?

A. In body, yes.

Q.8: What do you mean by "in body"?

A. There was a little bit of a bend later on, that I have no knowledge of ever seeing anything like it, but the scratcher is identically the same scratcher.

Q.9: Did the wires extend from the collar in the scratcher used on the Jones and Berdine tests in [2647-2] the same manner as the wires extend from the collar from scratchers later offered by B & W?

A. They do, they did.

Q.10: How did the wires extend from the collar of the B & W scratchers or wall cleaning guides offered to the trade?

A. They extended at radii to the collar.

Q.11: Was there any bend in them at all?

A. Yes, there was a bend at the outer end, an upward bend or a downward bend. There was a curve bent opposite the parallel of the collar.

(Deposition of J. E. Hall, Sr.)

Q.12: Did you see these scratchers when they were tested, I mean the B & W scratchers which were tested by Jones and Berdine?

A. I saw the scratcher, the end of the bristles in the cement columns where they took the cement away.

Q.13: I would like to have you state, if you will, if you saw any of the B & W advertising which was put out by that organization during the years from 1940 to 1950?

A. Yes, I have tried to keep up with all advertising, particularly magazine advertising.

Q.14: Were you interested in this type of tool as early as 1940?      A. I was. [2647-3]

Q.15: Where did you see any of this B & W advertising over that ten-year period from 1940 to 1950?

A. I take almost all of the oil papers, and I made it a general practice to turn to and look at every issue. There were very few issues that I haven't seen.

Q.16: Were you taking these trade magazines as early as 1940?      A. Yes, and earlier.

Q.17: What type of well completion equipment were you selling as early as 1940?

Mr. Lyon: That is objected to as leading.

A. Wall cleaning well equipment, cementing.

Q.18: What was it?

A. The earliest equipment I sold, manufactured or developed, rather, was a spiral centralizer with unique features in it for cleaning the well bore.

(Deposition of J. E. Hall, Sr.)

Q.19: Over what period of time did you sell the spiral centralizers, indicating, if you will, the earliest date and down to as late as 1950, if it was that late, or whenever you stopped?

A. The earliest spiral centralizers that was made was during the year of 1935. Then we began to manufacture them in 1936. I sold out to [2647-4] Weatherford Oil Tool in 1948. I continued making and selling them.

Q.20: So you were selling the spiral centralizers as early as 1935, and you continued to sell them as late as——

A. The earliest sales was in '46—'36 and '37. I done a lot of experimenting with them different places before I became satisfied to attempt to put them on the market. They began an active work in '37.

Q.21: And you continued to sell them both to the time that you sold out to Weatherford Oil Tool in '48?

A. Yes, but I had other people manufacturing under the license of them, various different places. That was continued plumb on through until now, about eighteen years.

Q.22: Were you operating as an individual or a company in 1937?

A. I have always operated as an individual.

Q.23: You heard John testify this morning?

A. I heard part of it, yes.

Q.24: Did you hear the Cosco guide mentioned?

A. I don't believe so.

(Deposition of J. E. Hall, Sr.)

Q.25: Did you hear the Houston Pipe Appliance Company mentioned? A. I did. [2647-5]

Q.26: What was that company?

A. That was a fictitious name that was used. The name was adapted and begun with the intention of making a corporation out of it, and it was a trade name, a fictitious name.

Q.27: Was it your company?

A. Well, it could be considered so. I had agreements with one of my boys that was working for Superior Oil Company at that time, was kind of sold on the idea, and he said he would like to work on it, and I started out and put him into it, or assisted him, later run into a lot of patent difficulty, and so at this time I imagine that I taken the situation in hand to try to bring it to a conclusion.

Q.28: Getting back to the B & W advertising from 1940 to 1950, during any of that period did you ever see any advertising of the B & W, Inc., showing a wall cleaning guide with anything but radial bristles or radial wires?

Mr. Lyon: That is objected to as calling for secondary evidence and as incompetent, irrelevant and immaterial.

A. I never have. I have examined all of their literature that I could find, and all of the places that it was sold, to keep up with it, and I have [2647-6] never seen that they advertise nothing but a radial proposition.

Q.29: Attached to some affidavits of Wright and Barkis that were submitted in this matter, there



(Deposition of J. E. Hall, Sr.)

was a drawing, which has a designation on it, "B & W Scratcher, Exhibit I." Did you ever see a scratcher of that character any time during the period between 1940 and 1950?

A. Never did. The only time I ever saw that was in Wright's deposition after he started to making the sidewise bristle scratchers.

Q.30: Did you ever see a wall cleaning guide that was advertised, offered to the trade, by B & W on any occasion, up to the time of the Nucoil scratchers that had wire bristles extending angularly to the collar in the fashion shown in that Exhibit L?

Mr. Lyon: That is objected to as leading.

A. I never did. I only saw one that had a similar sidewise. I think maybe they called it Multiflex. That was some time in '48.

Q.31: Did that have single wire bristles?

A. No, sir, it had a multiplicity of wires.

Q.32: Were you ever involved in any interference with Mr. Wright in the years 1943-44?

A. I was.

Q.33: Was that interference settled?

A. It was. [2647-7]

Q.34: How? A. Settled by agreement.

Q.35: Was that the agreement of September 15, 1944? A. It was.

Q.36: At the time of that agreement, do you know whether Mr. Wright knew what you were selling in the way of scratchers?

Mr. Lyon: That is objected to as calling for a

(Deposition of J. E. Hall, Sr.)

conclusion of the witness, incompetent, irrelevant and immaterial.

A. Yes, he knew what I was selling.

Q.37: Why do you say that?

A. He told me so. He kept up with the various—over the three years that we had been selling it, there had been various comments, and he kept up with it. I gave him one of the catlogs during the agreement.

Q.38: Did you know what B & W was selling—

A. Certainly I did.

Q.39: —in the way of scratchers at the time you made the agreement with Mr. Wright in September, 1944? A. I did.

Q.40: Where was this agreement made?

A. It was made in Mr. Wright's attorney's office in Los Angeles. [2647-8]

Q.41: How long a period of time did the negotiations for settlement cover?

A. Practically all day.

Q.42: It was completed in one day?

A. Completed in one day. I imagine it was getting pretty late when we were through with it.

Q.43: During the negotiations which terminated in the settlement contract, was there any discussion that you recall as to whether you would be barred from getting a valid patent under the interference counts?

Mr. Lyon: That is objected to on the ground that there has been no proper foundation laid.

A. I didn't understand the question.

(Deposition of J. E. Hall, Sr.)

Mr. Lyon: And incompetent, irrelevant and immaterial.

Mr. Scofield: Read the question.

(The reporter read the question.)

Mr. Lyon: Also as leading and suggestive.

A. Yes, by both Mr. Wright and Mr. Maxwell, both pointed out that due to the fact that the Jones and Berdine tests was equivalent to reducing it to a practice, was over a year prior to filing on the claims that were in interference. There were four of them.

Q.44: During these negotiations which terminated in the settlement contract, did Mr. Wright at any time make mention of the Kelley use, the Kelley well use, [2647-9] or this use on McMillan Unit No. 1?

Mr. Lyon: That is objected to as leading and suggestive, and further on the ground that there has been no proper foundation laid for any testimony with respect to any conversation.

A. He did not.

Q.45: Was the Kelley well use mentioned during those negotiations? A. It was not.

Mr. Lyon: Same objection.

Q.46: What application of yours was involved in the application that was settled by that contract?

Mr. Lyon: That is objected to as not the best evidence. The best evidence is the application itself.

A. It was one of my earlier applications that I had written. This particular one, I had it filed.

(Deposition of J. E. Hall, Sr.)

Q.47: Do you know the serial number?

A. Off the record, I could look it up for you. I may say that I don't attempt to try to control those things, as I have to handle many, many papers.

Q.48: I put before you a series of photostats that have been offered here as Exhibits 39A, 39B and 39C. Can you identify any one of those drawings?

Mr. Lyon: That is objected to as calling for secondary evidence. [2647-10]

A. I can identify them all. That serial number you asked for was serial number 388891, filed April 16, 1941.

Q.49: And that was the application that was involved in this interference that was settled?

A. It was. [2647-11]

\* \* \*

Q.52: Who was present at this discussion?

A. There was Mr. Kenneth Wright, Mr. Maxwell, his attorney, a fellow by the name of William McKinley that worked for the National Supply Company of California, Elmer Hall, my son, and myself.

Q.53: Was there a stenographer present?

A. Not that I seen.

Q.54: Did you see her at any time?

A. Yes, along at the last end, but not during none of the discussions.

Q.55: Do you know what her name was?

(Deposition of J. E. Hall, Sr.)

A. No, I don't. Her name is of record, though, perhaps.

Q.56: Where was Maxwell's office located?

A. Well, it was just off the corner of Pershing Square in California. I have forgot what building that is in.

Q.57: On the same street as the Subway Terminal Building is on?

A. Yes, I believe across the street.

Q.58: Was there a copy of this application 388891 at the meeting when you were settling this interference? [2647-12]

A. There certainly was.

Q.59: Now, at any time during this interference proceeding, had either Mr. Wright or Mr. Maxwell mentioned to you the Kelley well use?

Mr. Lyon: That is objected to as leading and suggestive, not a proper method of proof.

A. I talked with Mr. Barkis, Mr. Maxwell and Mr. Wright, and neither of the three of them mentioned anything of the Kelley use.

Q.60: Was Mr. Barkis present at that settlement meeting, that is at the time the interference was settled? A. He was not.

Q.61: When did you have this conversation with Mr. Barkis concerning the interference?

A. Mr. Barkis called me and said he was in Houston, over the telephone. My office was in Weatherford, Texas. And he said that he wouldn't be able to go to California, that he and Kenneth Wright were equal partners, and whatever Kenneth

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Wright done in this, he was happy to go along with him.

Q.62: When was this phone conversation with respect to the meeting? A. Prior.

Q.63: How long prior? [2647-13]

A. Shortly, some three or four days, something like that.

Q.64: Is that all that was said in the phone conversation with Mr. Barkis?

A. Well, there was the idea that if we had it worked out good and everything like that, it would be all for the best, or something similar to that, was the substance of the thing, at least, and we told each other goodbye.

Q.65: That was before the settlement agreement, which I believe you said was September 15, 1944. When was the first that you ever heard of the Kelley well use?

Mr. Lyon: That is objected to as immaterial.

A. The first time I ever heard of the Kelley well use was after this long-continued episode in the Patent Office claiming this patent, claiming that we owned it, and claiming it backwards and forwards. Now they finally claim it was public use. It came in with an affidavit of Kenneth A. Wright some time in the Kelley use. I believe the first I knew of it was some time in February, possibly, '53.

Q.66: You never heard anything about the Kelley use prior to the time that it was brought into this proceeding? [2647-14] A. No, sir.

Mr. Lyon: That is objected to as leading.

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A. I searched all the papers, all the affidavits, and it has never been mentioned in none of them up until recent date.

Q.67: You have indicated in one of your previous answers that you worked in the well completion field, started about in 1937, have you not?

A. It started in 1935.

Q.68: And you have indicated that these spiral centralizers were offered by you some time in 1937?

A. They were offered in 1936. We made the oil show in Tulsa. We had some there, but the active business didn't commence until in the year of 1937.

Q.69: In this proceeding, you have been charged with appropriating ideas of others. I would like to have you, for the record, just relate, if you will, the history of the development, of your development, in this scratcher field from the first down to the time when you filed the second application in 1945.

A. You mean all the different steps of events?

Q.70: Yes. I would like just for you to give a sort of chronology of your development from this 1935 date that you have mentioned.

Mr. Lyon: That is objected to as indefinite. Chronology [2647-15] of what? Development of what?

A. I might have to stop and look at some records, but I will attempt to get it offhanded, and we will check the records along with it, or whatever necessary. In the first part of 1935—

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Q.71: If you want a record while you are giving this history, why, if you think it is among the papers we have here, call for it, and I will see if it can be found.

A. I will probably call for the records at cross-examination.

Q.72: Cross-examination of whom?

A. If I am cross-examined, I will probably have to go into them.

Q.73: Well, both Mr. Lyon and I will anticipate that.

A. In 1935 I were drilling an oil well in Kern County, California, and I got an idea of putting bristles on the collars of the centralizers, so I had spent some time in getting one built, and many parts, because at that time I didn't have time enough to work on it myself, at the Hall Machine Shop in Bakersfield, California.

This Hall was no relative of mine whatsoever. I never knew him before I went in there. I did know his [2647-16] salesman. I knew his mechanic.

That model was built, and another similar model was built and later chromed. That model was built, the first model was sent to Los Angeles, to the office of Samuel Robinson, which taken the matter up, so he said, with Mark Herren and Mr. Maxwell. Mr. Maxwell and Mark Herren were practicing patent work together.

I had tendered a proposition to them, to Mr. Robinson, for them to file the patent through and



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prosecute it through the Patent Office for an interest in the patent, if obtained.

Q.74: Who was to get the interest?

A. Mark Herren and William Maxwell.

Q.75: Also state what the patent related to.

A. A centralizer with scratchers, combination of scratchers on the collar and the one we had had the scratchers on one collar, but the collars were interchangeable that we had made; you could put two collars on one centralizer, with scratchers on it or leave them off, either way.

Q.76: Whom was that filed through?

A. That wasn't filed. It was sent in to them to file, but due to the fact that the straight centralizer had been pretty well controlled by some patents by a fellow by the name of Steps in California, both Maxwell [2647-17] and Mark Herren advised against filing the straight centralizer patent. At least, the application was never filed.

About a couple of months later, or something like that——

Q.77: What year was this?

A. 1935—I had six scratchers made and run them on a string of casing. The size of the casing was 5 $\frac{3}{4}$ .

Q.78: Where was the well?

A. The well was in Kern County, California, in the oil field commonly known as the Weed Patch. The name of the well was Bristol No. 1. I had these scratchers, boys to help me install them, the crew on the rig I was drilling at that time, and the

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first joint I took up with the scratcher, before I installed it, I put it on the joint and run it down in the well and pulled it back, and that was my first knowledge that a radial bristle wouldn't reverse in the diameter if the walls were at a much greater diameter than the casing it was run in, and they were installed with lugs. In other words, I realized I only had a one-way traveling scratcher.

Q.79: What was installed with lugs?

A. The six scratchers was intalled on [2647-18] the pipe with lugs. Those lugs was beads made out of electric welding, built up inside of the collars, so they wouldn't slide over them.

Q.80: Why did you put them on that way?

A. Because that was the cheapest and the simplest and the fastest way to do it. Those scratchers were run in the hole. The pipe never went to the bottom. In fact, we had a permit to set the pipe off the bottom.

Then, next, I built two scratchers, centralizer scratchers, for 3½ pipe. In other words, considered to be 4-inch pipe. That was run in the inside of this pipe to the bottom of the hole, what they call the liner string.

Q.81: Fix the time.

A. Well, we had to do some drilling and so on. Off the record, I would say—or on the record—we was approximately close to the month of September.

Q.82: What year? A. 1935.

Q.83: The same well?

A. Same well. The only record I have now to

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verify that is the permit to the state, California State Bureau of Mines, that I have.

Those scratchers were run together with a Baker basket and a Baker whirler-type float collar, with the [2647-19] liner below and the collar on them above. That pipe was set and the well was put on production and produced. I sold it just shortly after that.

Q.84: You have identified these two as a centralizer scratcher of some sort. What were they, actually?

A. Well, a centralizer is where you use two cylindrical collars in an outward bow. They put four outward bow members, making the centralizer. I don't recall just how many springs the centralizers had on them at that time.

Q.85: Did these two centralizers have scratchers attached to them or not?      A. Yes.

Mr. Lyon: I object to that as leading and suggestive.

A. If I may state here, that one of the great problems we had was how to—we could fasten the bristles in the collar, on account of the radial action that the springs had.

Mr. Lyon: I move to strike the statement of the witness as entirely voluntary, not responsive to any question.

A. I searched all the records after that in the Patent Office service for different types of the springs, how they were put in the collars, and various different things. I looked at a number of other

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devices [2647-20] that were made to clean well bores with bristles, and none of them would give me the relief that I wanted, and I continued working, and in the year 1936 I put teeth in the outward bow spiral springs on the centralizers, had much discussion on it, also put wire bristles on the spiral springs on the inside, and at that time I licensed my application to a company named Cosco Manufacturing Company. The principal man in that company was a man named Joe Horasta and Pat Smith, which was the vice president.

My son John and I discussed the thing at considerable times, how we could put a better cleaning device than the first application for spiral centralizer. At that time, I was a little short on money, and I asked Joe Harris, who was president of the Coast Oil Field Manufacturing, to advance the money to pay for the application, and he finally stated that he would go for the helical dies that was later filed an application on. A co-pending application was filed in '35, and the spiral centralizer was moved into this application.

All through the years I constantly worked with well bore cleaning devices and run many, many wells. A rough figure, I presume that I sold around \$100,000 worth of spiral centralizers up to the year of 1940. I practically run every one of them that was run in wells myself, all [2647-21] over the United States, excluding California, and I was constantly searching for some type of finger device that would not describe a radial movement; in other

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words, something that could be reversed in the well bore diameter.

I used a number of other patents in the earlier days, trying to figure out how other fellows had put in bristles, and I found none of them that were doing the thing that would give me the necessary relief that I wanted in my device.

Some time between 1938 and 1940 I got the idea of how to make a scratcher and develop one that would reverse in the cylinder to a small degree, and by, possibly, the latter part of 1940 or the first part of 1941 I had developed to my satisfaction a design of a bristle placed in a collar that would reverse in a cylinder. I made a number of them and tested them various different ways.

In the early part of '41 I had advertising photographs made, cuts made, and advertised them.

Q.86: You saw the Jones and Berdine tests in 1939, didn't you?      A. I certainly did.

Q.87: Did you see a reversible scratcher there?

A. I did not. [2647-22]

Mr. Lyon: That is objected to as leading, and also calling for a conclusion of the witness.

A. I didn't see anything in the Jones and Berdine tests but what I had also seen in former applications of various different types of finger device. In fact, I didn't see as much. Most of those devices that had a radial movement showed that they had some type of closing arrangement. They well realized that they only worked in one direction.

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Q.88: Proceed with the chronology. I think you brought it down to the time when you first thought you had a reversible device, sometime in 1940 or '41.

A. This reversible device, I have been constant since 1935 in various different types of development of it. I don't know the exact date, but the earliest date that I do know and the earliest ones that I do know that I did, I had a scratcher and had shown it to many of the [2647-23] fellows in the oil fields and carried them around with me, and I had it completely manufactured in the early part of '41. I imagine that I had made it, owing to the time and the period of time it takes to make things, I imagine this last scratcher that I made was made some time in the latter part of '40.

Q.89: I would like to have you state what that was and where you had it manufactured.

Mr. Lyon: That is objected to as a compound question. This witness ought to be asked a single question at a time.

A. I were making scratchers in '40, beginning the making of centralizers at my mother's place in Parker County. I also was making centralizers and had small shop equipment in Hollywood, California, that I made and fabricated centralizers together.

Q.90: When was that?

A. That was in the latter part of the year of '40 and first part of '41.

Q.91: Did anybody else do any manufacturing

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for you on these particular scratchers in 1940 and '41?

A. Yes, I had several outfits to do certain things. I consulted certain outfits to do certain things. I consulted the Hollister Spring Company there in Los Angeles. [2647-24]

The Reporter: Hollister Spring Company?

Mr. Lyon: The Witness didn't say Hollister.

Q.92: What did you say?

A. Hollister Coil Spring people.

Mr. Scofield: That was what I understood.

Mr. Lyon: That wasn't the way I understood it.

Q.93: Proceed.

A. Well, I am going to back that up, and if anybody has got any different idea, I said I consulted and discussed with the Hollister Coil Spring people. That is my statement, and that is my statement I will stand by and I don't want nobody contradicting me. I am going to give some contradiction on some testimony here, and I am going to ask somebody to explain it away.

Q.94: Well, go ahead.

A. The type of scratcher that I had developed over here was made the easiest way. I made that with round holes in the collars, and the type that I had made in California, where I could get a punch press to punch out some of the holes, I had made some few collars with square holes. The first holes that I made in them was long holes, because I had a radial spring in them, and after I began to run tests on them, I began to make slight changes, and



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I found out later that I needed the square hole, and up to that time I had been using the [2647-25] round hole. Over when I was in this part of the country where I had drilled them, the first holes I used were round holes, were drilled, not punched. These square holes, the press I used to punch them was a press that made television chasses for me in Hollywood. That factory is about two blocks from Vine Avenue there, and it is in the Hollywood section there. I don't know the address of it now. If anybody wants it, I will find out for them. They done considerable manufacturing for me, and that was through the year of '40, and possibly '41, maybe some up into '42. I don't know just exactly. I have been going back to them many times since then. After I began to make the sidewise bristle——

Q.95: When was that first done?

A. That was done at the same time, in '40. The only note that I have on that are the early photographs, a copy of them that was filed, and I know we were some time filing the application. In other words, the application wasn't filed over night. I know there was considerable discussion on the application before it was filed.

Q.96: Who filed the application?

A. A fellow by the name of Robert Smith in California.

Q.97: What application are you [2647-26] referring to?

A. I am referring to serial number 388891. It was filed the fourth month, sixteenth day, 1941.



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Q.98: Now, proceed with the development. You may first state whether these first scratchers that were made were the complete scratcher or the half scratcher, some of which are here in evidence.

Mr. Lyon: That is objected to as leading.

A. All of my scratchers that were made in, you might call it, a semi-hand operation, without machinery, was made of half circles, because I used an anvil affair to clamp the collar down and to bend the collar around it. The solid round collars wasn't made until we followed up with a punch press, something you can carry plumb around.

Q.99: How were the wires fastened to the collar?

A. All of my earlier wires was fastened with a stove bolt or a rivet, which the stove bolt was the same thing. I just took a little stove bolt and screwed it up tight and then hit it with a hammer. In other words, that rivet was so it couldn't come undone.

Q.100: How did you form the coil spring?

A. I made a hand-winding machine and wound the coil. I bent the various other eyes, the turns that was necessary to hold, the inner part, by pliers.

Q.101: In those first scratchers that you made, how [2647-27] were the coil springs arranged with respect to the collar?

Mr. Lyon: That is objected to as leading, and also as not the best evidence, calling for secondary evidence.

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A. The first scratchers I made, the coil springs run with the collar.

Q.102: What do you mean by "run with"?

A. They run around with the collar.

Q.103: You mean the axis was——

A. The axis, the spring was with the inner circumference of the collar. It was on the inside.

Q.104: Why did you do that?

A. Because I didn't know any better, I guess. Just done it so I could thread a wire around through it. It looks like I was using the collar for a radial movement. I only had a radial movement in mind when I made the first ones. I made many drawings, many sketches, of them. In fact, I had several models and several designs that I wrote maybe two or three or four applications, specs upon.

Q.105: Were any of those filed?

A. No. Before I would file them, I would often write application specs up on various things, or assist, or it was written, and before I got it filed, I had other developments in, and, in fact, I [2647-28] were carrying on my work in the field, and I would go back, and before I could ever file and give the final word to have them filed, improvements came along.

Q.106: Were you working with a patent attorney?

A. Well, I worked—in none of the development work, I never done with a patent attorney, but I

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kept a patent attorney pretty well employed all the time.

Q.107: Who was he?

A. A fellow by the name of Smith, R. W. Smith.

Q. 108: Was he the same Smith whose name appears in this application 388891? A. He is.

Q.109: Now proceed with your history after these first scratchers were made by you by hand.

A. As I say, I had the difficulty running with the one, part of the circle of the collar, threaded with a wire, and that was a similar design as some of the earlier patents that I had seen on like devices before.

Q.110: At this juncture, I might ask you whether or not you fastened the wires to the collar in the manner shown in this first application of yours?

Mr. Lyon: That is objected to as leading and suggestive, and not the best evidence, calling for secondary evidence.

A. No, the first drawings that we [2647-29] made——

Mr. Lyon: I object to any statement about the drawings.

A. The first drawings that I recall that was made was where we made the spring go around with the collar, and was threaded with a wire that threaded plumb around the circumference of the collar, and there was two bristles to each wire, one

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on each side of the collar, similar to the scratcher that is made now.

Mr. Lyon: If you will just wait a minute, I move to strike the statement as not responsive to any question and as secondary evidence and not accounting for the primary evidence, an effort to describe a drawing.

A. A later development was made by making the hole smaller, and I found that I could get a resilient sideways movement of the spring that give me a little relief and reversing in time.

Q. 101: What is this wire you are referring to? Scratcher wire or some other wire?

A. That is the wire that holds the bristles in place. Then I moved out that wire and fastened the inner arm of the scratcher by a stove bolt, and I found at that time that I could get sideways relief. By putting it in a cylinder, I could see the operation, and then I enlarged the holes by cutting them square.

Q.112: Why didn't you use this manner of fastening [2647-30] the wires to the collars as shown in serial 388891?

A. Because fastening of the springs on the inside, fastening the arm, is all that was necessary to hold that arm to the collar, so that the bristle would in turn be held in position, and due to the fact of the equipment we had on hand, a rivet was used instead. In certain factories this collar design would probably be preference; in other factories where equipment was available to do the manufacturing, why the rivet would be more preference.

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Mr. Lyon: I move to strike the statement as not responsive to the question. The question was why didn't you, and he hasn't answered it yet.

Q.113: Yes, I would like an answer to that. Why didn't you use this particular type of anchoring device that is shown in serial 388891?

A. Because I didn't have the type of equipment to do that type of manufacturing; never have had it.

Q.114: Now, we are down to some time in 1941, I believe.

Mr. Lyon: I don't know how you got to that conclusion.

Q.115: Well, where are you, Mr. Witness?

A. It was more this type here that is shown in 388891—— [2647-31]

Q. That is April 16, 1941?

A. At that time I had decided I had thoroughly developed a scratcher that would reverse in a cylinder with the fingers at a much larger diameter, and I filed an application on it.

Q.117: That was in April, 1941. What did you do after that toward promoting or developing the scratcher situation——

\* \* \*

A. I remember taking some scratchers that I had made and going to Corpus Christi.

Q.118: When was that?

A. Well, that was either May or the first part of June.

Q.119: What year?

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A. 1941. Then I came in to Houston, where I had some stuff. I had a warehouse I had been using down here on Polk Avenue. I went out to the Gulf some time the fore part of June, out to the Gulf Publishing Company, and discussed with them about putting an [2647-32] advertisement in the Oil Weekly, and they told me what they wanted in the line of a picture, and I went to some place over here on Polk Avenue along about I believe it was the 23rd of June, or possibly I went there the 22nd, 1941, and I had some pictures made of it.

Q.120: Have you seen a reproduction of that picture lately?

A. I had pictures all the way along. I taken care to look it up recently, or had it looked up, and I got the reproduction of that picture, and I have seen it the last few days, and I had an ad put in——

Q. 121: I show you Exhibit 53, and ask you whether you can identify that?

A. That is of the scratcher that I had made, and I had the pictures taken.

\* \* \*

Q.122: Can you identify the picture?

A. I certainly can. I said it was a picture of a scratcher that I had at that time.

Q.123: Does this picture bear any relationship to the visit to the Gulf Publishing Company?

A. It certainly did. [2647-33]

Q.124: What relationship?

A. It bears the relationship that I was carrying

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out what I had agreed with them, wanted to put an advertisement in that business magazine.

Q.125: About when was this picture obtained?

A. I believe it was obtained about the 24th or 25th of June, something like that, a day or two after I had taken it up there to have the picture made.

Q.126: And have you attempted to find out just when that was taken?

A. I have; I have looked up all the records that I could on it.

Q.127: Did you go to the commercial photographer that took the picture? A. I did.

Q.128: Were they able to establish the date?

A. They were.

Q.129: How were they able to establish the date?

A. They found the bill, the order where it was taken, where I repaid them for it.

Q.130: Did you ask for reproductions of this to be made? A. I have.

Q.131: Do you have those yet?

A. No, sir. [2647-34]

Q.132: All right. Proceed. After you had the picture taken by the Litterst Commercial Photographing Company, what next did you do?

A. Next I recall some time after that—I don't know just how long it was—I went to Weatherford and figured out how I could get some more of these made, and I went into town, and I went into the barber shop to get a haircut——

Q.133: Before you get to Weatherford, was there anything done with the picture?

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A. I don't know. There was something done with it. I don't know whether I notified the Gulf Publishing Company to come and get it, or I got some pictures of this myself, but I got them, and I remember there was several days spent in that period of time between Bill Atchison and myself, who was the advertising field man of the Gulf Publishing Company here in Houston, and we discussed that advertisement several days. He helped me. At that time I had no publicity agent, and he helped me write the first ad.

Q.134: What was the first ad?

A. Well, the first ad is that page ad I have seen here a number of times. I don't know what identification mark it has.

Q.135: In what magazine did it [2647-35] appear?

A. The Oil Weekly.

Q.136: Do you know the date?

A. It was some time after this date here.

Q.137: What date? Some time after what date here?

A. June 23, or June 24.

Q.138: I show you photostats of an advertisement that has been offered here as Petitioner's Exhibit Z. Can you tell me what that is?

A. That is the ad that was run in the Oil Weekly that I had been talking about, and this cut in that, that is from the picture that I have been talking about.

Q.139: And the picture you refer to is Exhibit 53, Applicant's Exhibit 53?

A. That is right.

Q.140: Does that photograph appear on the ad?



(Deposition of J. E. Hall, Sr.)

A. It certainly does.

Q.141: Now, at the time that this appeared in the Oil Weekly, did you arrange for advertising to be prepared besides that that appeared in the Oil Weekly?

A. Yes. I had a few, though I don't know how many I had, but I had a number of what they call re-runs, similar to the page in the magazine, or exactly like the page in the magazine.

Q.142: Now, I would like to have you tell me just [2647-36] what the structure of this scratcher was that was shown in the photograph; and by that I mean tell me first who made it? A. I did.

Q.143: And how was the band of the collar made?

Mr. Lyon: Objected to as calling for secondary evidence. The scratcher itself is the best evidence.

A. The collar was made first in two halves. The holes were drilled, then I had two seat clamps that I bolted the material down on a part of an anvil of a length that represented part of a circle, and I opened the thing round, then hammered the lips down on the outside, making them in halves. These particular springs was wound with annealed wire, all of it. Later, after I went into manufacturing, I had some 250 pounds of this annealed wire. The war was on, and it was during that period the wire was awful hard to get, spring wire was, and I used this annealed wire, but when the springs were het to be tempered, they would unwind, and then again when you would stretch them, they would unwind again,

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and due to the fact that the springs are crossed, is a mishapening. We didn't intend that.

Q.144: That was due to the——

A. That was due to the fact of the winding of the spring, and we thought as long as it didn't [2647-37] do any harm, we continued making them that way, and there was the question or not for a while whether we would continue or not.

Q.145: Now, you have taken in your hand a half scratcher that has been identified here as Applicant's Exhibit 36. I would like to have you tell me what that is.

A. That is a half scratcher that was picked up about six years ago as we were moving at my mother's place about nine miles or ten out of town, and this scratcher was picked up at the location where I had made my first scratchers.

Q.146: Out of what town?

A. Out of Weatherford.

Q.147: Does your mother live on the outskirts of Weatherford?      A. About nine miles out.

Q.148: Who found this scratcher?

A. I got it myself. The fact of the business, it wasn't picked up, it was hanging on her back porch, hanging on a hat rack on the back porch.

Q.149: Who made that half scratcher, Exhibit 39?

A. I made that and wound the springs, tempered the springs.

Q.150: Could you fix about the date when that was made? [2647-38]

(Deposition of J. E. Hall, Sr.)

A. The only thing that I had to fix the date that I know of, it was a considerable time before I made this picture, because I had thoroughly worked it out, which takes a lot of time, and made it, and I know that I was on my return trip from Corpus.

Q.151: And the picture you have referred to in the last answer was Applicant's Exhibit 53?

A. That is right.

Q.152: Were the holes in this collar, half collar, Exhibit 36, punched or drilled?

A. They were drilled.

Q.153: By whom? A. By me.

Q.154: What sort of drill did you have?

A. I had one of these hand-crank drills.

Q.155: How were those wires wound?

A. Those wires were wound by——

Q.156: What were the coils in, the wires wound by?

A. The coils in the wires was wound by a little hand winding machine that I had made.

Q.157: Where did you make that?

A. I made that in California.

Q.158: Do you recall when you first substituted rivets for stove bolts in these scratchers?

Mr. Lyon: That is objected to as [2647-39] leading.

A. Yes, at the time that I got through changing the design of the bristle and taken it out and tested a big part of the junk which is tested to fit the collar and to set the spring at whatever angle I wanted, by using the stove bolts, I could loosen them and

(Deposition of J. E. Hall, Sr.)

make the changes, then make the various tests again. The stove bolt answers the same purpose that the rivet answers, and these rivets here——

Q.159: You are referring to the rivets on Exhibit 36?

A. The rivets here on this exhibit were the same kind. The first rivets were not made special, and the heads were too big, and they give me some trouble on the rivet. I remember what a time I had [2647-40] there.

\* \* \*

Q.160: Now, you are referring to the design as Applicant's Exhibit 36, and the picture is Applicant's Exhibit 53?      A. That is right.

Q.161: In one of your previous answers you have indicated that some of the rivets had heads that were too large. Can you tell me whether the rivets that held the wires in Exhibit 36 were rivets of that type, or were they rivets that were of a satisfactory type?

Mr. Lyon: That is objected to as leading and suggestive.

A. These rivets were not satisfactory.

Q.162: Do they constitute some of the rivets that had heads of too great a size?

A. That is right, too great a thickness.

Q.163: Why did rivets with heads of too great a thickness give you difficulty?

A. The difficulty of making a scratcher that would run satisfactory in the cylindrical space in all oil wells is to make a scratcher that has as thin a diameter or thick thickness in the collar as you can

(Deposition of J. E. Hall, Sr.)

possibly get, and the thickness of these rivet heads only made the scratcher possible in diameter 1/16 of an inch larger than it would have been with the proper rivets.

Q.164: How did you arrive at the disposition of the [2647-41] coils in those holes in this collar?

Mr. Lyon: That is objected to as leading.

A. Realizing that the spring finger had two major things, or major travels to travel in, one is from the largest diameter of a well bore to the minimum diameter, second, the pipe would have to reverse action, and the spring would have to turn something like 190 degrees, and it would also have to travel in and out, and in order to do that, my earliest test to make the spring that would travel that and not take a bend in it was five wraps, and by setting the spring at an angle, cause what I figured was the proper pitch, that when the scratcher was reversed it would always cause the finger to have an inward travel, in towards the band, instead of a radial travel.

I have never found a great deal of difference, if they are substantially a sidewise bristle, from the radii, whether they are more at an angle or lesser angle; they seem to work in about the same manner.

In order to get this function five wraps, five convulsions in the spring was adopted, and the pitch of the spring coming out through the collar hole at an angle would govern the pitch of the spring finger going toward the bore of the well.

(Deposition of J. E. Hall, Sr.)

I also realized that I could set the spring at an upright [2647-42] position on the radii, but it would take a greater diameter, so I set it back, so that that would be a smaller diameter in the thinness of the collar.

Those are some of the reasons why the spring was set at an angle through the hole, and five convulsions with the travel of the reverse action, and the inward and outward action, was the reason that was adapted but it was adapting, too, at the pivot point of the finger, without having flexible resilient means at that point; there would be too much strain throwed on the finger, and it would be forced to bend, a repeated combination of punishment to it at repeated reverses, and finally it would break off.

Q.165: Was this half scratcher or were scratchers of that type in existence when this photograph was made, Exhibit 53?

Mr. Lyon: That is objected to as leading, and also calling for a conclusion of the witness.

A. I never made any more scratchers myself, other than put a few together, after this photograph was made.

Q.166: Now, answer my question. The question was, was this half scratcher, Exhibit 36, in existence at the time that this photograph was made?

Mr. Lyon: Same objection. Leading.

A. It was. [2647-43]

Q.167: What type of collar was the scratcher which was Photograph Exhibit 53? What type of collar did that have, single weld or double weld?

(Deposition of J. E. Hall, Sr.)

A. This had a double weld.

Mr. Lyon: That is objected to as leading.

Q.168: Does that show in the photograph?

A. It does.

Q.169: Is it clearly evident in the photograph?

A. It certainly is.

Q.170: After this exhibit, Photograph 53, was taken here in Houston to run these ads, Exhibit Z, in the Oil Weekly, what did you do then?

A. Well, on my next trip to Weatherford, I went into Weatherford and in the barber shop I met a man by the name of E. A. Frantz.

Q.171: Had you know him before?

A. Well, I did know him for many years, but not intimately.

Q.172: Was he a resident of Weatherford?

A. He was.

Q.173: What business was he in?

A. I believe at that time he was in the real estate business. He had previously had something to do with manufacturing. He also had a small cotton buckle tie factory that he ran something like two or three months [2647-44] a year.

I showed him this cut. I also showed him my application. I showed him my Patent Office drawings, and he came out and sat in my car, and I went to the back of the car—I had a coupe then—and I got a couple of half scratchers, and we sat in the front seat and discussed it, and, of course, I was showing him how easy the springs could be made and one thing and another, and we discussed there about how



(Deposition of J. E. Hall, Sr.)

it should be made. I told him that I had decided that should be made with oil tempered wire, and that I had a little wire on hand, and wire was awful hard to buy, that these were made with annealed wire.

He says, "If we can temper it ourselves, we had just as well use that wire." He says, "I will make a deal with you and start making them."

Some month or so after this time, he started to manufacture them.

Q.174: Did you make a contract with him?

A. Yes. He went up then—in fact, I went with him, we went up and discussed with his attorney, a fellow by the name of E. A. Zellers from Weatherford, Texas, we discussed the contract, and we went back the next day and discussed the contract, and I believe the next day the contract—in that same two or three days the [2647-45] contract was finally signed. He had no equipment at that time for the immediate manufacturing of this here, and he immediately went away——

Mr. Lyon: Just a moment. I move to strike that statement last made, as entirely voluntary, not responsive to any question.

A. ——until he said he would see if he could find some equipment to use.

Mr. Lyon: I move to strike the last statement as hearsay; also not responsive to any question.

Q.175: I show you a two-page contract and ask you whether you can identify it?

A. Yes, sir. That is the contract I entered in with



(Deposition of J. E. Hall, Sr.)

Mr. E. A. Frantz to manufacture my [2647-46]  
scratchers.

\* \* \*

Q.176: I note that this contract is dated July 12, 1941. How long prior to the date of that contract was your discussion with Mr. Frantz?

A. A very few days.

Q.177: What do you mean by a few?

A. Well, I stated that some three or four days from the time I met him in the barber shop until the contract was drawn, because we had some time used in discussion as to what we would put in the contract.

Q.178: Had the ad in the Oil Weekly, July 7, appeared when you entered your first negotiations with Mr. Frantz? [2647-47]

Mr. Lyon: That is objected to as leading.

A. I do not know. All I know, that I had some photographs of the picture that is present. I had several of these.

Q.179: You are referring to Exhibit 53?

A. Yes. I had some little ones, too, that I remember, little, small ones.

Q.180: Smaller than the photograph that is before you, Exhibit 53?

A. Yes. I don't know whether they was made with a small camera or what, but I remember at that time I had some smaller ones.

Q.181: What did you have those made for?

A. I had them made for just the purpose of showing what I had.

(Deposition of J. E. Hall, Sr.)

Q.182: Did you have any of the half scratchers, Exhibit 36, when you talked to Frantz about manufacturing this device? A. I certainly did.

Q.183: How many of those did you have?

A. Well, I carried all of the different things that I had, different parts that I had, of the scratchers, and sizes, I had two tow-sacks in the back of my car with various things in it. I remember of getting out two half scratchers and getting in the front seat to show and [2647-48] discuss it with him.

Q.184: What did you mean in your previous answer by a tow-sack?

A. That is a burr sack. That is a name, possibly, used in the south. That is all I was raised up to call them, tow-sacks.

Q.185: Just a hemp sack? A. Yes.

Q.186: How soon after you made your contract with Mr. Frantz were you able to actually get into the manufacture of the scratchers? Over what period did it take you to get things under way and get your manufacturing facilities in such shape as to manufacture the scratchers?

Mr. Lyon: That is objected to as leading, grossly so. In fact, I wonder who is testifying.

A. From that date, I would say it taken about a month and a half until we got started to manufacturing.

Q.187: Did you make anything else besides scratchers? A. Yes, I was making——

Mr. Lyon: That is objected to as immaterial and irrelevant.

(Deposition of J. E. Hall, Sr.)

A. —spiral centralizers all the while, [2647-49] and selling them. That was my source of income.

\* \* \*

Q.188: I would like to have you look at the contract which has been marked Exhibit 54 and state whether or not that is your signature?

A. Yes, that is my signature.

Q.189: Can you tell me whether or not that is your copy of the contract?

A. Yes, sir. [2647-50]

Mr. Scofield: The contract is offered in evidence.

\* \* \*

Mr. Scofield: I will also offer at this time the photograph, Applicant's Exhibit 53.

\* \* \*

Mr. Scofield: I also offer at this time the half scratcher which was marked for identification as Applicant's Exhibit 36.

Mr. Lyon: The same objection as to the offer of the contract and the photograph, for the same reasons.

Q.190: You have indicated in one of your previous answers that the type of scratchers you and Mr. Frantz were making, or started out to make, were spiral centralizers. [2647-51]

A. No, I told him about my manufacturing of the centralizers, and we agreed that he would take one thing at a time. I was already making my centralizers. I had pretty fair equipment. I was making them and already tuned up on them, and he

(Deposition of J. E. Hall, Sr.)

said he wanted to start making one at a time, and this would be the easiest thing to get started on, but right after he started to making the scratchers, I allowed him to begin making centralizers. I don't know how soon. I would have to search to see if I could find it up to date. I haven't got any notion when he first started making centralizers, but it was soon after he began making these, I would say four or five or six months.

Q.191: How long did it take him to begin making the scratchers?

A. Oh, offhanded, I would say before he could turn any amount of them to complete an order, was a month and a half.

Q.192: How were the collars made at first?

Mr. Lyon: That is objected to as immaterial, as to how the collars or the centralizer was made.

Mr. Scofield: I didn't inquire about the collar of the centralizer.

Q.193: How were the collars of the scratcher made? [2647-52]

A. The first collar, we went to Bateman Machine Shop in Mineral Wells. He had a punch press up there, and we had him to punch the holes for us in the first collars that was manufactured.

Q.194: So that the holes were punched in the bands? A. That is right.

Q.195: How were the collars themselves made? Were they made in one piece, or were they made in two pieces, as you had made them before?

A. He made them both ways, but he didn't

(Deposition of J. E. Hall, Sr.)

make them in two pieces, as I had made them and had to make them in two pieces. He made some of them in two pieces. I had them made in two pieces for streamline pipe, upset pipe. The other collars were solid. They had one weld in them, a solid piece of material bent around and welded.

Q.196: Where was Mr. Frantz's establishment located in Weatherford?

A. It was between Bridge Street and Water Street, off of New York Street, I believe.

Q.197: How much of an establishment did he have? By that I mean what equipment did he have for manufacturing?

A. He didn't have any to manufacture scratchers, but he had a few buckle machines in there, had a lathe and a shaper. Most all the equipment we started out with [2647-53] was either rented or obtained from Bateman Machine Shop.

\* \* \*

Q.199: When you started in with this endeavor, you and Frantz, who was working for Frantz? Did he have any employees?

A. I don't believe so at that time. He had employees that had been working for two or three years, but they only worked a couple or three months a year, during the season of manufacturing buckles. [2647-54]

\* \* \*

Q.203: Who set up this operation to manufacture this scratcher? Was it Mr. Frantz or your-

(Deposition of J. E. Hall, Sr.)

self, or did you do it jointly?

Mr. Lyon: That is objected to as leading.

A. The biggest part of it was set up [2647-55] by Mr. Bateman.

Q.204: Mr. who?

A. Mr. Bateman, in Mineral Wells. Frantz and I discussed it, and Mr. Frantz knew nothing about the oil fields and the requirements, and at that time Frantz spent very little time working, because he was busy in his real estate, house building and what not, so we went by and showed Mr. Bateman what we wanted, and he made the first die, and set up the first die that punched the first collars here, and then we started from that time on, and by that time we had made the dies that formed the collars.

Q.205: How did you wind the first springs?

A. After discussing with Mr. Frantz the type of winders I had, we suggested some changes, and he had part of the spring winder made in his shop at Weatherford, in his machine shop there.

Q.206: Have you seen those spring winders here?

A. Yes.

(Mr. Scofield produces a winder.)

A. No, it is not that one.

(The witness produces another winder.)

Q.207: You have picked out of the box behind you a device which is marked for identification as Applicant's Exhibit 34. Will you tell me what that is? [2647-56]

(Deposition of J. E. Hall, Sr.)

A. Yes. That is one of the parts of the machine. I may say this, the machine to wind the springs consisted of four parts, or four different little machines to wind them. There was a left and right-hand spring. That takes two spring winders to wind them. Then there was a left and right eye that they turned on the springs. Now, all the springs that I had turned the eyes on before was turned by a pair of pliers, sharp-pointed pair of pliers, so then we had to develop something to turn the eyes, this machine here.

Q.208: You are referring to 34?

A. 34 is an eye-turning machine.

Q.209: What is that Exhibit 33?

A. That is a spring winder. That winds the convulsions in them. There had to be two sets of those made, parts of which was made in Mr. Frantz's machine shop, and part of the work was done out of the shop.

Q.210: Where else was the work done, besides in Mr. Frantz's machine shop?

A. I carried these spring winders to a blacksmith shop.

Q.211: Where? A. In Weatherford.

Q.212: Whose blacksmith shop was it?

A. I forget the name of the fellow, but [2647-57] I believe I could find it, or I could locate it for you. It is right in back of the post office about a block.

Q.213: Why did you take it there?

A. Because Mr. Frantz didn't have no welding machine when we started.

(Deposition of J. E. Hall, Sr.)

Q.214: Why did you need a welding machine?

A. Because there is a lot of welding done on these winders, quite a bit of welding done. They had to study them, and quite a lot of tedious welding.

Q.215: Now, you have indicated that Exhibit 33 was used as a winder for the coils.

A. That is right.

Q.216: And what was Exhibit 34 used for?

A. Bending the eye where the rivets went through them.

Q.217: Is that the eye that passes over the rivet beneath the collar?

A. The eye or hook, or anything you might want to call it. [2647-58]

\* \* \*

Q.218: Where did you spend most of your time in this partnership with Mr. Frantz? Was it in the shop or outside?

Mr. Lyon: That is objected to as assuming a fact that has not been established by the evidence.

A. I spent the earlier part of the manufacturing scratchers, I would say the first thirty days, about 100 per cent of the time in the factory, or in the place we was attempting to make a factory out of. Thereafter I probably spent eight per cent of the time, or a larger portion of the time, in the oil fields selling stuff.

Q.219: You have indicated that the first scratchers that were made were of the half type.

Mr. Lyon: That is objected to as leading.



(Deposition of J. E. Hall, Sr.)

A. You mean with Frantz?

Q.220: Yes.

A. I wouldn't say so. At the same time we had this punch press set up to punch the collars. We could punch a whole collar and form it as well as we could form a half collar at that time, but I had some of the half collars made, as well as the whole collars, [2647-60] because a certain per cent of the pipe is streamline pipe.

Q.221: Are there any records in existence to establish the dates when you first got into manufacturing?

A. The contract and the shipment that was made by Frantz, and he made all the shipments out of Weatherford for me by freight lines or whatnot.

Q.222: Yes, but would those shipments show the type of scratchers, that is whether they were half scratchers or full collar or full circular scratchers?

A. Yes, they would. They would have to show the type of shipments it was. That was the way all of our shipments have been made. Shipments are always designated, that material that was shipped on the inside of the box, the shipment.

Q.223: Do you have any of those records?

A. No, I don't believe so; I possibly could find them, and possibly could obtain them. I don't know. If they have not been destroyed.

Q.224: Have you tried to find them? Have you gone through your records on this particular matter?

(Deposition of J. E. Hall, Sr.)

A. Yes, I have had some two or three people going through all of my old records and trying to establish everything I could find. Up to date, I haven't [2647-61] seen any of the old shipments, the early shipments that was made. I recall in the very early days making a special deal with Frick-Reid, and I imagine we could get the early shipments from Frick-Reid.

Q.225: I mean in your files have you been able to find any record which would establish when the first scratchers were made by Frantz?

Mr. Lyon: That is objected to as leading.

A. No, I haven't, that I know of. There are so many of those papers, I don't believe that I had the knowledge of what I have got in the papers.

Q.226: Have you gone through all the records in an attempt to determine when this manufacturing was started? A. Yes, I have obtained——

Q.227: Have you up to this time been able to furnish me with any records to show the definite date when the first shipments were made from the Frantz factory?

A. No, I haven't. [2647-62]

\* \* \*

Q.231: And were these the first scratchers that were produced by the partnership of Frantz and Hall?

A. It wasn't a partnership. He manufactured the scratchers for me at a given price, a certain per cent. Yes, I attempted to cover all the fields.

Deposition of J. E. Hall, Sr.)

I had my son John located in California. I had him helping me. But I principally was concerned in the Mid-continent area.

Q.232: Did the first scratchers that were made by Frantz have the cross wires? [2647-63]

Mr. Lyon: That is objected to as leading.

A. I would say that all the scratchers that was made by Frantz, possibly the first thirty days, figuring about three-quarters of a pound of wire, or half a pound of wire or something like that, to a scratcher, and, as I recall, we had 250 pounds of annealed wire left over from my earlier operations.

Q.233: And what relationship did the annealed wire bear to these cross wires?

A. It was what caused those wires to be crossed.

Q.234: After you had run out this annealed wire, what type of wire did you use?

A. Oil tempered wire.

Q.235: What gage?

A. Used some 14, some 15 and some 13. We settled on 14 as the standard type.

Q.236: There has been marked for identification here as Applicant's Exhibit 38 a scratcher. Will you tell me what that scratcher is?

A. Yes, that is the type of scratcher that was made by Frantz. I would say this type of scratcher began after the first thirty days that he manufactured the scratcher, or near about that.

Q.237: Who designed that scratcher? [2647-64]

A. I designed it.

(Deposition of J. E. Hall, Sr.)

Q.238: Can you tell me whether that scratcher is made with the half collar or the full collar?

Mr. Lyon: I object to that on the ground that the scratcher itself is the best evidence.

A. That is made by a full length of material, making the collar, with one weld, apparently. That is what we call the slit type scratcher.

Q.239: What do you mean by slit type?

A. That was the type of scratcher that we put over upset pipe. You notice these two little slit places on the opposite side from the weld in the collars. That was so that if we had to put them on the pipe with upset pipe they would go over the head, or perhaps it was welded afterwards. I don't know what time it could have been welded. We could cut the weld and open it up and put that on the pipe. If we didn't have those slits, we couldn't open it up and get it back in good shape. That is these things here.

Q.240: You are referring to a diagonal slit that appears along near the edge of the collar?

A. Yes. And also at the time that we made this stuff and we made the die to cut it with, cut the material, had the material cut at an angle, so that we would not have a half hole, like is in the earlier scratchers [2647-65] that I had made, the half collars. Here we were overcoming the half hole, and we were making another weld, and we were welding to the body on top of it, instead of up through the holes.

Q.241: Can you tell me whether this scratcher,

(Deposition of J. E. Hall, Sr.)

Exhibit 38, has the large head rivets or small head rivets?

Mr. Lyon: That is objected to as leading.

A. This rivet is a rivet that we found, harness type of rivet, with a very thin head, not like the head in the former rivets.

Q.242: You are referring to the rivets in the half collar, Exhibit 36?

A. Yes, and also the whole scratcher.

Q.243: You are referring to Exhibit 37?

A. Yes.

Q.244: Can you tell me what type of wire was used in Exhibit 36? Was it annealed wire or tempered wire?

A. Tempered wire.

Q.245: How are you able to determine that?

A. Simply because if this wire had had to be hot to be tempered, there would be various bends in the wire, and it would also have taken an unwind. In order to temper, to heat it, you had to put about ten to fifteen pounds springs in and heat it up hot, [2647-66] and the weight of those springs will cause irregularities in the finger, as you will notice in Exhibit 36.

Q.246: If it took an unwind, what would the result be?

A. The spring fingers would be crossed, as they are in Exhibit 36. [2647-67]

\* \* \*

Q.262: What determined the disposition of the

(Deposition of J. E. Hall, Sr.)

springs [2647-71] in the holes of the collar in Exhibit 37?

A. The degree that we set the eye on the inside of the shank to be held at a radii with the collar determined or held the coil at the angle that we desired to have the finger held, as the coil holds the fingers.

Q.263: What is the eye you refer to in your answer?

A. The eye is where the rivet goes through, which holds the spring in position.

Q.264: Whose design was that?

Mr. Lyon: That is objected to as immaterial.

A. That was my design. [2647-72]

\* \* \*

Mr. Scofield: During the cross-examination of Mr. Jones in the California depositions, there were marked for identification as Applicant's Exhibit 4 some pages from a report that Mr. Berdine made directly to the Union Oil Company on the Jones and Berdine tests. Counsel for petitioner objected to the offer of the photostatic copies, and due to the fact also that it was only a partial part of the full report that was made, and in looking over the depositions I see that we adjourned for the day, and I indicated on the record that I would produce the original report, so these pages could be [2647-77] identified.

\* \* \*

Mr. Scofield: I am not offering any explanation for the report in any regard. I am offering the

(Deposition of J. E. Hall, Sr.)

report in evidence. Your objections, of course, are on the record as you see fit. This is the applicant's Exhibit No. 4, and I will furnish you with the necessary copies of the report for the Patent Office. [2647-79]

\* \* \*

Mr. Scofield: I show you another letter which has been marked for identification as Applicant's Exhibit 51, which is dated January 5, 1944, a two-page carbon copy, and ask you if you can identify that letter? A. I can.

Q.297: Do you know the source from which these letters were obtained? [2647-84] A. I do.

Q.298: What was it?

A. It was obtained out of my files.

Q.299: Where were your files?

A. The files were in the old office that I have at Weatherford, Texas.

Q.300: Do you recall having written this letter on or about the date that appears on the letter?

Mr. Lyon: That is objected to as leading.

A. I do.

Q.301: Does that letter assist you in the determination of when the Applicant's Exhibit 49 was produced?

Mr. Lyon: That is objected to as leading.

A. It does.

Q.302: Why were you writing John in the first part of January in 1944 with respect to this scratcher?

(Deposition of J. E. Hall, Sr.)

Mr. Lyon: That is objected to as immaterial and calling for a state of mind.

A. Because there were—he reported to me that there were certain requirements of a close tolerance scratcher.

Mr. Scofield: I will offer the carbon copy which has been marked for identification Applicant's Exhibit 51, a letter dated January 5, 1944, addressed to John [2647-85] Hall and signed in typewritten signature by Jesse E. Hall. [2647-86]

\* \* \*

Q.335: Did you hear Mr. Doble testify on behalf of the petitioner in California?

A. I certainly did.

Q.336: Did you see the scratchers which he made up, or which he had made up, to be replicas of the scratchers shown in Exhibits Z and Z1, which I put before you? A. I did.

Q.337: I show you Petitioner's Exhibit JJ and ask you whether you recall the scratcher that is shown in that photograph?

A. Yes, I recall it.

Q.338: Did you hear him testify with respect to that being a replica of one of the scratchers which was shown in your advertising?

A. I did. [2647-93]

\* \* \*

Q.339: In your opinion, is the scratcher shown in Petitioner's Exhibit JJ a replica of the scratcher



(Deposition of J. E. Hall, Sr.)

which is shown in the advertising which appeared in the Oil Weekly of July 7, and as shown in the cuts which are before you, Exhibits Z and Z1?

Mr. Lyon: That is objected to as calling for a conclusion and opinion of the witness, the exhibits themselves are the best evidence.

A. It is positively not.

Q.340: Well, explain why you have stated that it is not a replica.

A. The coils are in the holes at a radii, and the coils in the holes of the advertising of Exhibit Z and in the holes at very much of an angle. The coil springs coming off of the coils, the fingers coming off of the coils, in Exhibit Z come off at the angle of the wrap of the spring. The fingers in Exhibit JJ come off the coils at a cantered position.

The inside hole in the arm where the rivets hold the springs to the scratcher in Exhibit JJ is parallel to the coils in the spring. [2647-94]

The inside holding arms in Exhibit Z is cantered to the coils. This cantering position is a degree that holds the coil spring at an angle in the holes.

Q.341: Are the holding arms you have referred to in the last answer the cross-over wires inside of the collar through which the rivet passes to hold the wires?

A. They are, and for those reasons are the reasons that I made the statement that it is not a reproduction or any part of it. Every angle of the

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springs or every major feature of the springs was changed.

Q.342: Attached to Petitioner's Exhibit JJ are plan views of scratchers showing wires extending from the collar. These photographs are Exhibit V, Exhibit W and Exhibit X. Now, do those wires indicate the angle of the wires with the collar which the wires bore to the collar in Exhibits Z or Z1?

Mr. Lyon: That is objected to as leading, grossly so.

A. No, they do not, not anywhere near.

Q.343: Is the angle in Exhibits Z and Z1 greater or lesser than the angle shown in Exhibits V and W and X?

Mr. Lyon: Objected to as indefinite, and also as leading.

A. Taking a start from the radii of the collar, the angle in Exhibit V is much greater than the angle in [2647-95] Exhibit Z, not any close comparison.

Q.344: Do you mean to indicate that the angle of the wires with the collar is greater in V, W and X than the angle which the wires have or make with the collar in Exhibit Z?

A. That is correct.

\* \* \*

Q.345: Now, what do you mean in your last answer, that the angle, which the wire makes with the collar in V is greater than the angle made with the collar in Exhibit Z?

A. In the angle related, the finger related, to

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the collar in Exhibit Z is much less from the radii than the angle in Exhibit V.

Q.346: Then what you were doing was taking the angle from the extension of the radii——

A. That is correct. [2647-96]

\* \* \*

Q.348: Now, I would like to have you state whether the angle which the wire makes with the collar, that is the angle between the wire and the collar, is greater in Exhibit V or less than the angle which the wires make with the collar in Exhibit Z?

Mr. Lyon: That is objected to as leading, grossly so.

A. They are greater in Exhibit V.

Q.349: That is, it is your belief that the angle which the wire makes with the collar, that each one of these wires makes with the collar, is greater in V than it is in Z?

Mr. Lyon: That is objected to as already asked and answered several times.

A. Yes, they are, from the radii in the collar.

Q.350: Now, I would like to have you look at the photograph, Petitioner's Exhibit CC. I will ask you whether or not you can identify the scratcher that is shown there. Just refer to this. Do you recall Mr. Doble testifying with respect to that scratcher? [2647-97]

\* \* \*

A. Yes, I remember the scratcher very well, as

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I was shocked to find the irregularities in this scratcher when I made an examination. I also noticed with the examination of this scratcher when I were making it, from then on, and the records will bear it out, that Mr. Doble was trying to dodge the issue that he didn't make it; before I examined it, why he had taken all responsibility of making this scratcher. [2647-98]

\* \* \*

Q.359: Do the wires extend from the collar in Exhibit CC at the same or at a different angle from the manner in which the coils extend from the scratcher shown in Exhibit Z?

Mr. Lyon: That is objected to; it is entirely immaterial.

A. That is one of the major things that I mentioned that I noticed. That discrepancy was bad. The wires extend at a different angle.

Q.360: Won't you explain that a little more, what you mean by a different angle in the two exhibits? Take first Exhibit CC.

A. The wires extend at a different angle at Exhibit CC, not in the two exhibits.

Q.361: Extend at a different angle from what?

A. The top row extends at a greater angle, or a lesser angle, from the radii than the bottom angle—the bottom row.

Q.362: Is that true for Exhibit Z?

A. That is not. The only reason, I could see they are very careful to take the photograph with

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the top row up, or a misleading position. The bottom row, the angle of the scratcher fingers are of a greater degree from the radii, the bottom row having a different length than the top row, which is not according to [2647-100] Exhibit ZZ, or according to no other scratchers that I have ever made.

Q.363: In your last answer, you are referring to Exhibit Z or ZZ? You said ZZ.

A. To Z. As I have pointed out, the difference in the anchoring, the difference in the coil, the difference in the spring extending in a different angle, and the difference in length, and those four major differences relating to the coil, and I cannot conceive any other difference that could be injected into the installation of the scratcher of the coil.

Q.364: Do you consider that the scratcher shown in Exhibit CC is a duplicate or a replica of the scratcher shown in Exhibit Z?

A. Not in any part; it is grossly away from it.

\* \* \*

Q.366: Had you manufactured a scratcher shown in either of the drawings 39B and 39C, excepting the ones shown in the small figure 3 of 39B, more than one [2647-101] year prior to the date of the filing of your application on November 6, 1945?

Mr. Lyon: That is objected to as leading.

A. I have not.

Q.367: On how many occasions did you go out to Dominguez Hill to see the Jones and Berdine tests?

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A. I don't recall now. I only can recall two occasions at that time.

Q.368: Did you have a device that was being tested by Jones and Berdine? A. I did.

Q.369: What was it?

A. A spiral centralizer, manufactured by the Coast Oil Field Manufacturing Company.

Q.370: Do you know whether it was tested first or last, or when it was tested during the sequence of the different tests made at Jones and Berdine?

A. It was tested last; as I recall, it was tested on the ninth run.

Q.371: Do you have any reason for remembering the fact that it was tested last?

A. Yes, I have more than one reason.

Q.372: Will you state them?

A. I followed some cement billets that was laid up, or the test followed those, and checking the Union [2647-102] Oil Company report, I recall the billets that I saw ahead of the test that I made, which caused me to realize that I was there just after they were made. I were there on the ninth run.

Q.373: How many billets did you see?

A. I believe there were four.

Q.374: Did you witness any of the tests on any of the other apparatus?

A. I were there while they were making some tests on it. I don't believe that you would understand why—to answer your question—you would understand what the witnesses could mean, unless I give you an explanation.

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Q.375: Well, give me whatever explanation you have as to what you saw there with respect to the tests that were being made.

A. Their simulated well was constructed beside oil tanks. The Union Oil Company had an operator that stayed up on top, that done the hoisting, and I never went up on the tanks. I never seen anyone else going up on the tanks. I understood they were making some tests on some of the scratchers, but I don't know what they did or anything about it. I only know that they ran a pump and that they moved the hoist up and down. That is all I know. [2647-103]

Q.376: Did you ever talk to Jones personally with regard to the tests that were being made on your Cosco guide?

A. I talked to him after the test was made. I never saw Jones during the testing of the guide.

Q.377: Whom did you talk to, if you talked to anybody, with respect to the tests that were to be made on your Cosco guide?

A. I talked to Berdine.

Q.378: Did you know him?           A. Yes.

Q.379: Did you tell him how to mount the Cosco guide, or did he know how to mount them without your instructions?

Mr. Lyon: That is objected to as absolutely immaterial, and also as leading and suggestive.

A. Well, I told him how to mount it, as well as left some of the literature with him.

Q.380: Did you see them mounted?

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A. Yes, I saw them on the piece of pipe, two of them.

Q.381: Were you there when your particular Cosco guides were run?

A. I were there when one of them was run.

Q.382: What do you mean by one of them?

A. There were two tests run.

Q.383: Of the Cosco guides? A. Yes.

\* \* \*

Q.388: What I want to know is whether you were [2647-105] actually present when any of the B & W scratchers were run, besides seeing these billets after they were run?

A. That would be a hard question to answer positively. I couldn't swear that I was present, but I am sure that I was, because they was operating the thing, and that was my understanding.

Q.389: Does that mean that you were there when they were run, or that you were there while they were running something?

A. I imagine while they were running something. I couldn't see through the pipe to know what they were running.

Q.390: So you are not certain of the fact that they were actually running B & W scratchers?

A. No, I am not.

Q.391: Now, have you on any occasion ever had reason to write to anybody with respect to these Jones and Berdine tests, before this controversy arose with B & W?



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A. Yes, I have had several occasions to write and to go see people about this Jones and Berdine test, prior to this controversy.

Q.392: Now, my inquiry is solely as to any writing that you have made concerning the Jones and Berdine tests, [2647-106] dated prior to the time that there was any controversy whatsoever with B & W.

A. I wrote a report or analysis of the art to some members of the Sun Oil Company, that there had been some complaints made in Corpus Christi, Texas, and I mailed them, and sent a letter explaining to my son, John, to carry to Mr. English.

Q.393: I am not interested in any writing that you may have made concerning the art. I am asking you whether you ever on any occasion wrote to anybody concerning the Jones and Berdine tests prior to the time that any controversy arose with B & W or with Mr. Kenneth Wright.

A. I have.

Q.394: Do you know approximately the date of that writing?

A. No, I don't, as I wrote many, many letters, but I could check the letter.

Q.395: Do you know whether such a letter is in existence?      A. Yes.

Q.396: Do you know what year the letter is dated?

A. As I recall, it was dated in 1942.

Q.397: Do you know to whom the letter was directed? [2647-107]

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A. It was either directed to Mr. English or Mr. Marston of the Sun Oil Company, at Corpus Christi, Texas.

Q.398: Where was Mr. English located when you wrote this letter?

A. I wrote the letter to Corpus Christi; whichever one I wrote it to was located at Corpus Christi, Texas.

Q.399: And who was Mr. English employed by?

A. The Sun Oil Company.

Q.400: And where was Mr. Marston located?

A. Mr. Marston, I believe, was located in Dallas, or there could have been possibly one of them was located in Dallas and one of them was located in Corpus Christi.

Q.401: And why were you writing to Mr. English?

A. Because of a report that I had that Mr. Barkis had been complaining to him of the scratcher that I was selling.

Q.402: You have indicated that this was a report. What do you mean by that? Was it a report or a letter, or just what was it?

A. My son, John, was working in that territory, and he had written me a letter of the extent of complaint [2647-108] that the Sun Oil Company had made.

Q.403: Did you have a distributor at that time?

A. Yes, I did.

Q.404: Who was that?

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A. At that time we were using the Frick-Reid Supply stores as our distributors.

Q.405: I show you a folder that has been offered here as Petitioner's Exhibit 4N. Can you identify that? A. Yes.

Q.406: What is it?

A. This is a folder or a catalog that I had made, setting forth what I had to sell in 1942.

Q.407: Was that the earliest advertising folder that you used?

A. No, we had used that Acme scratcher folder as a price list, to take the place of a catalog. I had used other folders to sell centralizers with.

Q.408: What is the Acme catalog folder you refer to?

A. Exhibit Z. It specified the price, and it specified the article and the description, the same as the catalog does.

Q.409: Now, this Exhibit Z appeared in the Oil Weekly, did it not?

A. That is correct. [2647-109]

Q.410: And did you also use this as an advertising sheet?

A. Yes, I had many other sheets—I call them reruns—made, and they were leaflets. They were handed out as a catalog.

Q.411: When did you begin using this leaflet which you say was printed at the same time and was a replica of this Exhibit Z?

A. Well, I would have to see to answer that. As quick as I receive them, in many occasions we

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received the reruns prior to the publication in the magazine.

Q.412: So that it was probably some time in July of 1941?

A. It could have been in July of '41, and it could have been near after. I would rather think in this case they were received before the issue came out.

Q.413: Why do you say that?

A. Because I didn't have any literature on that, and I was anxious to get something, and as quick as they were set up to run this page for the magazine, why they could have run me the reruns.

Q.414: How soon after you had these Exhibit Z sheets made as advertising did you use the folder, Exhibit [2647-110] 4N, Petitioner's Exhibit 4N?

A. I made a contract—to get time, I made a contract with Frick-Reid. The folder was made immediately after the contract, within a month, or something like that. If I could see the contract, I could give you a close date on it. [2647-111]

\* \* \*

Q.416: Can you identify the contract?

A. I can.

Q.417: Would that help you at all in determining when you made your arrangement with Frick-Reid?

A. Yes. I made this contract on the 5th day of August, 1941. I made the contract, I was in Tulsa, Oklahoma. Immediately after making the contract, they sent me to see their publicity man in

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Shreveport, Louisiana, Bryan and Bryan, and there I negotiated the making of that catalog. [2647-112]

\* \* \*

Q.420: Does the fact that Frick-Reid was your distributor bear any relationship to the English letter which you have previously referred to in one of your answers?

Mr. Lyon: That is objected to as leading.

A. Yes.

Q.421: In what respect?

A. I believe that we used the mail box in Corpus Christi as listed in Frick-Reid's name.

Q.422: What do you mean by that, you used it?

A. Sent mail to that particular box.

\* \* \*

Q.423: At the close of this morning's session, I was examining you on a letter which you wrote to Mr. English with respect to Jones and Berdine. I show you a letter dated March 23, 1942, and ask you whether or not you can identify that letter. [2647-114]

(The letter is handed to Mr. Lyon.)

Mr. Lyon: I object to it on the ground that it is totally incompetent, irrelevant and immaterial and hearsay and self-serving declaration.

A. I can.

Q.424: Is that your signature on that letter?

A. It is not.

Q.425: Whose is it? Do you know?

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A. Howard Cherry, my bookkeeper.

Q.426: Where was Howard Cherry employed by you?

A. He was employed by me in Weatherford, Texas.

Q.427: Do you recall having sent this letter?

A. I did.

Q.428: Did you dictate the letter?

A. I did.

Q.429: Along about the fourth sentence from the last there is a statement which I would like to have you read, not on the record, but I would like to have you, after reading the statement, state on the record whether or not that refreshes your recollection as to the matter of sending this letter to Mr. English.

A. It does. [2647-115]

\* \* \*

Q.430: Mr. Hall, let me ask you where this letter was found, if you know?

A. Found in my office.

Q.431: Where? [2647-116]

A. Weatherford, Texas, in a box.

Q.432: What did the box contain?

Mr. Lyon: That is objected to on the ground that what the box contained, the box itself and its contents are the best evidence.

A. It contained a lot of old files, letters and one thing and another.

Q.433: When was it found?

A. Last week.

Mr. Scofield: To indicate to the Patent Office the

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character of reproduction of the documents, I will offer the original letter of March 23, 1942, which the witness has identified, as Applicant's Exhibit 56; the offset copy as Applicant's Exhibit 56A.

\* \* \*

Q.434: I show you a letter dated March 24, 1942, a five-page letter, addressed to Mr. R. L. English, Box 199, or 1999, Corpus Christi, Texas, care of Mr. John Hall. Can you identify that [2647-117] letter? A. Yes, sir.

Q.435: Do you recall having written that letter on or about the date that appears upon the first page of the letter?

Mr. Lyon: That is objected to as immaterial.

A. I dictated it on or about that time.

Q.436: Is this the letter that you referred to in your morning testimony when you indicated that you had written to Mr. English?

A. That is right.

Mr. Lyon: That is objected to as leading.

Q.437: Why was this letter sent in care of Mr. John Hall in Corpus Christi? Do you know?

Mr. Lyon: That is objected to as immaterial.

A. Because he was in that territory at that time, and I wanted to retain certain exhibits that was mentioned in this letter.

Q.438: Is it your signature? Is it your signature signed to this letter?

A. It is not, but my secretary signed it—book-keeper, rather.

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Q.439: Was your secretary in the habit of signing your mail?

A. Very much of it, because I was traveling, and often dictated a letter to him and would not wait [2647-118] until it was written.

Q.440: Where was this letter found?

Mr. Lyon: That is objected to as immaterial.

A. This letter was found in the same box that I found the other letters in, same bunch of files.

Q.441: When was it found?

A. Last week.

Q.442: What was this box of material you have spoken about?

Mr. Lyon: The box is the best evidence. I object to the evidence on that ground.

A. Oh, it was a box of miscellaneous files and patent applications and drawings and whatnot, and letters.

Q.443: Do you have an office in Weatherford?

A. I do.

Q.444: Do you have any files there in Weatherford? A. I do.

Q.445: How does it happen that this letter was not in your regular files?

Mr. Lyon: Objected to as immaterial, also as calling for conclusion.

A. Because of its date, its age. I take the files down, clean out at a certain time, and put in boxes to preserve the older stuff.

Q.446: Can you explain the circumstances why you [2647-119] have the original letter?

A. Yes.



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Q.447: Why do you have the original letter?

A. Because it was given back to me, as I had some of the exhibits that I wanted to retain after they got through reading them, and when they got the exhibits back to me, they give the entire——

Q.448: Were there exhibits sent with this letter?

A. There were.

Q.449: What exhibits were sent with the letter?

Mr. Lyon: That is objected to on the ground that the exhibits themselves are the best evidence.

A. There is Exhibit 1, Exhibit 2, Exhibit 3, Exhibit 4, Exhibit 5 and Exhibit 6.

Q.450: Does the letter indicate that Exhibits accompanied it? A. Yes.

Q.451: Can you tell from the letter what Exhibit was?

A. Yes. It was a type of scratcher functioned about the same as the B & W scratcher functioned.

Q.452: Did you make a search to find these exhibits when you found the letter?

A. I did. I found the exhibits that I have with the letter. [2647-120]

Q.453: I show you a photostat of a drawing, and ask you whether you can identify that?

A. I can.

Q.454: What is it?

A. That is a scratcher that I designed.

Q.455: What is the particular sheet here? Does the sheet indicate?

A. Well, the sheet is made on the Patent Office paper drawing size. It indicates that I at one time

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probably had the intention of writing or preparing an application of it, maybe filing one.

Q.456: In the upper left-hand corner there is a notation, Exhibit 1. Does that mean anything to you?

A. Yes. That correspondence with the Exhibit 1 here, that also is in Howard Cherry's handwriting.

Q.457: Are you acquainted with his handwriting? A. I am.

Q.458: How long was Howard Cherry with you?

A. Oh, possibly three years.

Q.459: What were his duties with you?

A. He was bookkeeper and general office man. He attended to all the shipping and such things of that nature, getting the stuff out, and billing.

Q.460: Was he a stenographer?

A. Yes, he was a stenographer and [2647-121] bookkeeper.

Q.461: Where did this Exhibit 1 which you have before you come from?

Mr. Lyon: Objected to as entirely immaterial.

A. It came from the same box this letter came from.

Q.462: When was it found?

A. Last week.

Q.463: Found at the same time or at a different time from the letter?

A. Found at the same time.

Q.464: Can you tell me from the letter what was sent as Exhibit 2?

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A. Yes. There was an application for a spiral centralizer filed September 3, 1935.

Q.465: Why did you send that?

A. Because it was a development——

Mr. Lyon: Objected to as entirely immaterial.

A. Because it was a tool that was—that I had developed in well bore cleaning and cementing.

Q.466: Did you make a search for it, Exhibit 2 that was sent with the letter? A. I did.

Q.467: Did you find Exhibit 2?

A. No, I did not, because I realized that I had had a lawsuit on the spiral centralizer in [2647-122] make Charles, and that exhibit was probably lost during that lawsuit I got into.

Q.468: Do you know that to be a fact, or is that guess on your part?

A. That is a guess on my part, because all of my files was worked into that lawsuit. That belonged to it, and I never did straighten them back up.

Q.469: I show you a certified copy of an application for patent and ask you whether or not you can identify that?

A. Yes. This is the first spiral centralizer application I filed, 1935. This is serial No. 388,891.

Q.470: Can you tell from the notation in the letter which you find at the bottom of page 3 whether or not this was the application filed, that was sent on?

Mr. Lyon: Objected to as leading and suggestive.

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A. Yes, I can tell.

Q.471: How are you able to identify that application as the application that was sent out as Exhibit 2?

A. Because there is only one I had filed at that date, and the only one that—that is the principal reason; it was a well bore cleaning device.

Q.472: Is the filing date of the application indicated [2647-123] in the letter? A. Yes.

Q.473: What is the filing date of your application 38,891?

A. The letter indicates September 3, 1935. The file wrapper indicates September 3, 1935.

Q.474: Does the letter make reference to any particular part of this application that was filed on September 3, 1935?

Mr. Lyon: That is objected to on the ground that the letter is the best evidence of what it refers to.

A. Well, this makes reference to the—it is a competitive tool which removes filter cake from the bore of the well and centers the pipe.

Q.475: My question was whether the letter makes any reference to any particular part of the application?

A. I don't understand what you are referring to.

Q.476: Won't you read into the record, then, the paragraph which has to do with Exhibit No. 2? You will find it in the last paragraph on page 2 of the letter which is numbered page 3.

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A. The last paragraph?

“Next I developed a spiral casing [2647-124] guide. I filed the application on September 3, 1935. This is a competitive tool to the scratcher, as to removing the filter cake, and centering the pipe. If you will read the objects of this invention Exhibit 2, you will readily see that I was working on filter cake removing devices prior to the time of this patent.”

Q.477: Now, can you answer the question?

A. What was the question?

Mr. Scofield: Read him the question.

(The reporter read the question: “My question was whether the letter makes any reference to any particular part of the application?”)

A. Yes.

Q.478: What part of the application does the letter refer to?

Mr. Lyon: That is objected to as entirely immaterial. The letter speaks for itself.

A. To the part of the application that specified the object of the invention, of removing filter cake and centering the pipe.

Q.479: Can you tell me from the letter that was sent on as Exhibit No. 3?

Mr. Lyon: What was sent on, Exhibit No. 3 is the best evidence of what it is. The witness may testify [2647-125] with relation to it, but the question is objected to on that ground.

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A. Evidently it was a drawing.

Q.480: Did you search for that drawing?

A. I did.

Q.481: Were you able to find the drawing which was sent on with the letter and marked Exhibit 3?

A. No.

Q.482: What was sent on with the letter as Exhibit 4? Can you tell from the letter?

Mr. Lyon: Same objection as to the preceding question. The exhibit itself is the best evidence.

A. Yes, there was a patent sent on, marked Exhibit 4, and was issued October 1, 1912.

Q.483: Did you in your search find the patent which was sent on and marked Exhibit 4?

A. Yes.

Q.484: Where did you find that?

A. Found it with the letter.

Q.485: Does the letter indicate what was sent on as Exhibit 5? Just a minute. I show you copy of a patent, on the outside of which appears a notation, Exhibit 4. Can you tell me what that is?

Mr. Lyon: That is objected to as entirely immaterial. [2647-126]

A. This is the exhibit that is mentioned in this letter, and the handwriting on the Exhibit 4 was prepared by Howard and written by Howard Cherry.

Q.486: Is the patent identified in the letter in any respect?

Mr. Lyon: Objected to on the ground the letter itself is the best evidence as to what it identifies.

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A. Yes, it is identified.

Q.487: How?

A. It was issued October 1, 1912.

Q.488: Do you find that the patent, Exhibit 4, was issued on that date?

A. Yes; October 1, 1912.

Mr. Scofield: I gave you a copy of this, Lewis.

Q.489: Does the letter indicate what was sent on as Exhibit 5?

A. Patent granted to J. C. Jones, March 15, 1921.

Q.490: Did you search for that exhibit?

A. Yes.

Q.491: Did you find it? A. I did.

Q.492: I put before you a patent, on the outside of which appears the notation, Exhibit 5. Can you identify that? [2647-127]

A. I can. That is the handwriting of Howard Cherry, the man that writ the letter for me.

Q.493: Whom was the patent issued to?

A. J. C. Jones, patented March 5, 1921, and corresponded with the statement in the letter.

Q.494: What was sent on with this letter as Exhibit 6?

A. The Phil Jones and Dennis Berdine report.

Q.495: Is it so identified in the letter?

A. It is.

Q.496: Did you make a search for that report?

A. I did.

Q.497: Did you find it? A. I did.

Q.498: I show you a copy of a report, on the

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face of which appears Exhibit 6. Can you identify that?

A. I can. That is Howard Cherry's handwriting, the man that writ the letter, also my stenographer and bookkeeper.

Q.499: Is that the report that was sent on with the letter? A. It was.

Q.500: Now, what exhibits were you unable to find which were sent on with this letter to Mr. English?

A. I was unable to find a drawing. [2647-128]

Q.501: What was the exhibit number?

A. I believe it was Number 3.

Q.502: Is that the only one that you were unable to find?

A. That and the application, which I can explain on.

Q.503: And the application which you refer to was the Exhibit 2? A. Yes.

Q.504: Did you find a drawing that would correspond to the drawing which was sent on as Exhibit 3?

A. Yes; to my opinion. To my opinion——

Q.505: Just a minute. I show you a photostat of a drawing and ask you if you can identify that?

Mr. Lyon: That is objected to as leading and suggestive, incompetent, irrelevant and immaterial.

A. Yes, I can identify that as a drawing of a early scratcher that I worked on.

Q.506: What is your recollection as to what the



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number was of this, or whether or not this drawing was sent on with your letter?

Mr. Lyon: That is objected to as not the best evidence, and leading and suggestive.

A. My recollection that this last drawing, this was Exhibit 1, and that the one that was [2647-129] marked Exhibit 1, that he marked it wrong, and it was Exhibit 3. That is just my recollection of it.

Q.507: I would like to have you put in your own handwriting up in the right-hand corner of the exhibit which you have just identified the exhibit number that you think should have been noted on the drawing when it was sent with the letter.

A. (The witness complies with the request.)

Q.508: Now, put inside of the border line in the right-hand corner—no, wait a minute—put inside of the border line in the upper left-hand corner that the exhibit number was that was put on the drawing when it was sent with the letter, and put your initials——

Mr. Lyon: That is objected to as calling for a conclusion of the witness.

Q.509: ——opposite. No, inside, inside.

A. In here?

Q.510: Yes. Now, put in there the exhibit number that was put on the drawing when it was sent to Mr. English.

Mr. Lyon: That is objected to as calling for a conclusion of the witness and no proper foundation laid.

A. (The witness complies with the request.)

(Deposition of J. E. Hall, Sr.)

Q.511: Put your initials after that Exhibit 3.

A. (The witness complies with the [2647-130] request.)

Q.512: Also put your initials by the other exhibit number which you have put in the upper right-hand corner.

A. (The witness complies with the request.)

Q.513: Now, I would like to have you mark on Exhibit 1 in the upper right-hand corner the exhibit number which this particular drawing should have been marked—no, put it below.

A. (The witness complies with the request.)

Q.514: Did you check this letter before it was sent to Mr. Inglish?           A. I did not.

Q.515: How are you able to state that at this time?

A. Because I never saw the letters, only I remember dictating it.

Q.516: How does it occur that you did not check the letter and check the numbers of the exhibits?

A. Because I were working in the field. When I would go in to check up on everything, I would generally give him—answer all my mail. He would take it down in shorthand, and then the letters was written after I was gone. Sometimes I would give him enough mail, enough dictation, to last him for two or three days. [2647-131]

Q.517: Was there any indication in this correspondence that has been submitted to you here that you left town on this particular day or the day before? And I call your attention to the letter writ-

Deposition of J. E. Hall, Sr.)

n to your son, John Hall, which has the date of  
arch 23, 1942. A. Yes, I recall——

Mr. Lyon: That is objected to as leading and  
uggestive, grossly so.

A. I recall the letter, because I found it in this  
x. I remember it very well. This letter mentions  
e fact that I would be going away.

Q.518: Would you read into the record that part  
of the letter which so indicates?

Mr. Lyon: That is objected to on the ground  
that the letter speaks for itself.

A. "I am of the opinion that I will leave to be  
the territory about thirty days."

Q.519: Does that have anything to do with your  
going away?

A. No, that is—yes.

"I will prepare something to try to win the con-  
fidence of English of the Sun Oil Company, I hope  
to get off to West Texas tomorrow, where I will  
probably spend the balance of the week." [2647-132]

Mr. Scofield: I have marked 56 the letter of the  
3rd. I think I have both the original and the offset  
copy. Have you a copy of the 24th letter, Lewis?

Mr. Lyon: Yes.

Mr. Scofield: I request that the reporter mark  
the offset copy of the letter of March 24, which is  
four pages, signed J. E. Hall, initialed below the  
signature "H. by H. C.," addressed to Mr. R. L.  
English, care of John Hall, Box 199, Corpus Christi,  
Texas, as Applicant's Exhibit No. 57. [2647-133]

(Deposition of J. E. Hall, Sr.)

Q.531: What did that have to do with Mr. Inglish? [2647-137]

A. Well, Mr. Inglish had reported a complaint to them pertaining to patent matters and one thing and another.

Mr. Lyon: That is objected to as a hearsay statement. I move that it be stricken on the ground it is pure hearsay.

Q.532: Did you write the letter?

A. I did.

Q.533: Does your signature appear on the letter? A. It does.

Q.534: Do you recall having written this letter on or about the date that appears on the letter?

Mr. Lyon: That is objected to as leading.

A. I recall a number of letters, and I recall this specific instance. It was quite a thing to prepare.

Q.535: Where did you find this letter?

A. I found it in the box, in the files stowed away with the other letters.

Q.536: Was it with the other correspondence that you have produced here?

A. It was with the same box.

Mr. Scofield: I request that the letter dated April 15, addressed to "Dear John and Shirley," be marked as Exhibit 58 for identification. [2647-138]

(The letter referred to was marked as requested, Applicant's Exhibit 58.)

Q.537: Who is Shirley?

A. My son John's wife.

(Deposition of J. E. Hall, Sr.)

Mr. Scofield: I now offer the letter which was marked for identification as Exhibit 57, said letter being a letter addressed to Mr. Inglish, Mr. R. L. Inglish, and signed J. E. Hall by H. C.

Mr. Lyon: I object to the offer as incompetent, irrelevant and immaterial, entirely hearsay, and having been neither properly proven or identified in any way, and as pure hearsay, as far as this party is concerned.

Mr. Scofield: I offer the Exhibit 1, drawing, which has been marked for identification as Exhibit 57A.

Mr. Lyon: Same objection to the offer of the exhibit.

Mr. Scofield: I offer the offset of the title page, that is the power of attorney, first three pages of the specification, of Serial No. 38891, application, which has been marked for identification as Exhibit 57B.

Mr. Lyon: I object to the offer, and I object to any fragmentary offer of the document stated in this office, as an incomplete offer of the material referred to, and I further object to it as incompetent, irrelevant and immaterial, and for the same reasons [2647-139] expressed in connection with the offer of Exhibit 57.

Mr. Scofield: I offer the drawing which was marked by the witness as Exhibit 3, and which has been marked here for identification as Exhibit 57C.

Mr. Lyon: I object to this offer as obviously incompetent, irrelevant and immaterial, not prop-

(Deposition of J. E. Hall, Sr.)

erly proven or identified, mere hearsay, and as immaterial to any issue in this matter.

Mr. Scofield: I offer the copy of the Batt Patent, which was marked for identification as Exhibit 57D.

Mr. Lyon: I object to the offer of this Batt Patent as in any way assertedly connected with the self-serving declaration of Exhibit 57. I have no objection to the offer of a soft copy of the United States letter patent for its showing as a patent.

Mr. Scofield: I offer the Jones Patent, 1371475, which was marked Exhibit 5 as Exhibit 57E here for identification.

Mr. Lyon: I object to this offer for precisely the same reasons as stated in my objection to the offer of the Batt Patent.

Mr. Scofield: I offer the cover page of the Jones and Berdine report which was marked as Exhibit 6 and has been identified here as [2647-140] Exhibit 57F.

\* \* \*

Mr. Scofield: I also offer at this time the three pages of drawings which have been marked for identification and referred to by a number of the witnesses as Exhibits 39A, 39B and 39C, the same being the drawings of the Hall Application 38891, the drawings Serial 627013 and Serial [2647-141] 556619.

\* \* \*

Q.568: Did you sit through the testimony or the deposition that was given by Mr. Jones with regard

(Deposition of J. E. Hall, Sr.)

to the Jones and Berdine tests that were made by the Union Oil Company?

A. I sat through while Mr. Jones gave the Jones and Berdine test; I didn't sit through all of Mr. Jones' deposition.

Q.569: Did you hear him testify with respect to the rotation of the B & W scratchers in the tests that were made at Dominguez Hill?

A. I did.

Q.570: I show you a photograph which was offered as Petitioner's Exhibit F and ask if you can identify that particular scratcher that is shown mounted there? Just refer to F. [2647-149]

A. I can identify it was the scratcher he testified to.

Q.571: Do you recall Mr. Barkis testifying with regard to the pattern that was made on the cement billet which appears second from the left in Exhibit H? A. I did.

Q.572: Have you any opinion as to whether or not the scratcher Exhibit F rotated in the test, having in mind that it made the billet which is shown in Exhibit K, both of which figures are before you, and which are exhibits taken from the Jones and Berdine article? [2647-150]

\* \* \*

A. That is nothing to indicate the rotation of the scratcher, and there is definite features to indicate that it did not rotate.

Q.578: What are the features that indicate that it did not rotate?

(Deposition of J. E. Hall, Sr.)

A. The features that indicate that it did not rotate, where the cement is chipped away, the most [2647-151] outside diameter length of the scratchers where they were bent in the square U form, appear to be at a much smaller diameter than the billets themselves.

\* \* \*

Q.579: Could the scratcher shown in Exhibit F obtain rotation from the well bore?

Mr. Lyon: That is objected to on the ground that the witness has in no way been qualified to answer the question, and it is incompetent, irrelevant and immaterial.

A. No, because they was to be of a smaller diameter than the well bore.

Q.580: How is it shown that the scratchers were of a smaller diameter than the well bore?

A. Well, at the top of the page——

Q.581: What are you referring to?

A. Exhibit K, marked, I see, a C on the middle, a little above the middle of the right-hand side at the top of that column, it can be readily seen that the length of the wires, outstanding wires were not the diameter of the billet itself.

Q.582: Were the wire lengths of the [2647-152] scratcher sufficient to reach the exterior surface of the billet?

Mr. Lyon: That is objected to on the ground the witness is in no way qualified to answer the question.



(Deposition of J. E. Hall, Sr.)

A. According to this wire length showed in this photograph here, there weren't.

Q.583: Would it be necessary for the wires to contact the well bore to cause rotation?

Mr. Lyon: That is objected to as calling for a conclusion of the witness; the witness has been in no way qualified to answer the question.

A. It would be necessary for the wires to contact the well bore, simulated well bore, on at least two sides or more of the simulated well bore.

Q.584: How do you think there was obtained any cleaning action of any sort with those scratchers, if the wires were not sufficiently long to reach the canvas bag which formed the inside surface of the well bore?

Mr. Lyon: That is objected to on the ground that the witness is in no way qualified to answer the question.

A. It would naturally, with the simulated pipe that was worked up and down, wouldn't swing exactly in the center, and it would have to drag to one wall, no matter how short they would be, perhaps.

Q.585: Is there any indication of any [2647-153] sort on either of the billets shown in Exhibit K that the scratchers which are shown partially by chopping away the billets, rotated?

Mr. Lyon: That is objected to as calling for a conclusion of the witness, as incompetent, irrelevant and immaterial.

A. There is absolutely no indication in the billets

(Deposition of J. E. Hall, Sr.)

or in the description of the operation, that they rotated.

Q.586: In your opinion, was the test upon this particular scratcher a proper test of the cleaning ability of a scratcher of this sort as tested by Jones and Berdine?

Mr. Lyon: That is objected to as calling for an expression of an opinion of this witness, and obviously incompetent, irrelevant and immaterial; on the further ground that the witness has been in no way qualified to answer the question.

A. You mean an oil well?

\* \* \*

A. No. [2647-154]

Q.587: Why?

Mr. Lyon: Same objection.

A. Number 1, the bristles are not long enough to reach the well bore; number 2, if bristles bend in the U-form where the side of the wire would drag against the wall of the well, where the wall of the well is mainly made up with abrasives, sand, they would entirely grind off in a very short travel.

Q.588: What do you mean by a very short travel?

A. As it would pass into a well bore, where you have a bend in the wire, it rubs against the well bore with the weight of the pipe, even though it is not long enough to reach all the way around, it will wear off immediately.

Q.589: Is it your belief that the wires shown in

(Deposition of J. E. Hall, Sr.)

the scratcher in Exhibit F would wear off before they got to the bottom?

Mr. Lyon: That is objected to as leading and suggestive, calling for a conclusion of the witness, and the witness is in no way qualified to answer the question.

A. Absolutely, and in my experience of all the wires of scratchers in many wells that I have saw pulled out, and tests that I have run, that if the side of the wire strikes against the wall of the well, it will immediately fall in two at that [2647-155] place.

Q.590: What do you mean by fall in two?

A. It will break in two. The only way that you can run a wire in the hole and keep it from breaking off or falling off is to keep the wire straight and let the ends of the wire rub against the bore of the well.

Q.591: What would have become of these wires, in your opinion, if they had been run in an actual well bore and——

Mr. Lyon: Same objection.

Q.592: ——the wires were sufficiently long to have friction contact with the well bore?

A. The wires would immediately fall off at the bend, and you would only have a radial wire left, a radial portion.

Q.593: What would wear them off?

A. The abrasives of the well bore.

Q.594: To your knowledge, did B & W ever offer a scratcher such as that shown in Exhibit F?

(Deposition of J. E. Hall, Sr.)

Mr. Lyon: That is objected to on the ground that the witness is in no way qualified to answer the question.

A. I have no knowledge of them ever offering a scratcher as in Exhibit F. I might state that I have checked all the literature and various stocks and stores of their type of scratcher, and I have never saw such a [2647-156] scratcher offered to the trade in any way, shape, fashion or form.

Q.595: I call your attention to the scratcher shown in Exhibit G. The billet made by that scratcher is shown second from the left in Exhibit H. Is there any indication to you from examination of the billet that the scratcher rotated during the Jones and Berdine tests?

Mr. Lyon: That is objected to as entirely immaterial, as incompetent, irrelevant and immaterial, and no foundation laid.

A. There is absolutely no indication of rotation on this billet.

Q.596: Is there any indication that the ends of the scratcher extended to the surface of the billet?

Mr. Lyon: That is objected to on the ground the witness is in no way qualified to answer the question.

A. There is indication that it did not extend to the surface of the billet.

Q.597: What is the indication that the scratcher wires did not extend to the surface?

Mr. Lyon: Same objection as to the preceding question.

(Deposition of J. E. Hall, Sr.)

A. If the scratcher wires had extended to the surface of the billet, there would have been a cleaning action; where there was a cleaning [2647-157] action, there would be a deposit of cement; where there wasn't a cleaning action, it would have still left the mud, and when they washed the billet off with water, it would have been a solid billet of cement, instead of grooves where it showed that it was not clean.

Q.598: Is there any indication in or upon the billet shown in Exhibit H that the scratcher rotated at the reversal point?

Mr. Lyon: That is objected to on the ground that the witness is in no way qualified to answer the question.

A. At the end of the reversal point marked Barkis 3 there is a definite indication that the scratcher did not rotate.

Q.599: What is that indication?

A. The indication is two reasons.

First, if it would have rotated at that point in the reversal, there would have been a greater cleaning action there than in the main part of the travel, and that shows at the end of it that there were less cement deposited on account of the indentations in it.

Second, which is another definite indication it did not rotate, the ends of each line of cement are of differing lengths. Those different lengths will correspond to the hunts of scratcher fingers upon the scratcher. If you will notice, the hunt will start at

(Deposition of J. E. Hall, Sr.)

the top of the [2647-158] band, and as it goes around, it will go to the bottom of the band and that indication proves very plainly on this billet, if the scratcher would have rotated as at the point of reciprocation, if each time it would have made a different reciprocation while the mud was being cleaned off, it would have plotted out a hunt—the scratcher fingers in the hunt and all the indentations or all of the cement deposits would be of the same length.

Q.600: Is the location where the scratcher changed direction indicated on that billet?

A. Yes.

Q. Is it so marked? A. It is.

Q.602: How is it marked on the margin?

A. Barkis 3.

Q.603: Is the upper end where the direction was changed also marked? A. Yes.

Q.604: How was that marked?

A. B, with an arrow pointing to it.

Q.605: Is there any indication at either of those points that this particular scratcher shown in Exhibit G rotated on the casing?

Mr. Lyon: That is objected to for the same reason [2647-159] as previously stated; the witness is in no way qualified to answer the question; incompetent, irrelevant and immaterial as to what this witness thinks. A. Absolutely not.

Q.606: Why do you say that?

A. For the various reasons I have explained, that at the bottom travel or upward travel of the

(Deposition of J. E. Hall, Sr.)

point of reversal, the mud should have been cleaned away to a much greater degree than it would be on the straight travel, and also the different lengths that the fingers made would be blotted out. In other words, it shows on each reciprocation that the fingers went down and came out in the same path that they went in with, and that is why you will see different lengths of the lines of cement where the mud was cleaned away.

Q.607: Had the scratcher rotated, and had the wires been sufficiently long to contact the bore of the well, what should have been formed at those reversal points?

Mr. Lyon: That is objected to as leading and suggestive, and as incompetent, irrelevant and immaterial, and on the further ground that the witness is not qualified to answer the question.

A. There should be formed a solid billet more than at those points. [2647-160]

Q.608: What is actually formed?

A. Only just stringers of cement, where each finger passed.

Q.609: I call your attention now to the scratcher which is shown in Exhibit I. The billet made by that scratcher is indicated on the left-hand side of Exhibit J, which is also before you. I will ask you to state whether or not that billet indicates that the wires of the scratcher were long enough to extend to the bore of the well and there have physical contact?

Mr. Lyon: That is objected to on the ground

(Deposition of J. E. Hall, Sr.)

that the witness is in no way qualified to answer the question, and it is incompetent, irrelevant and immaterial as to what his opinion is.

A. It only shows to me that they didn't extend throughout to the bore of the well.

Q.610: What is the basis for that statement?

A. Because the lines that they have made where they have cleaned the mud off and then left the mud are somewhat broken, and if they had passed against the bore of the well with the circulation they would have broken the viscosity of the mud, and cement would have moved in, and you would have had even lines of cement or solid billet.

Q.611: Is there any indication in that billet or on [2647-161] that billet that the wires came to the surface or had frictional contact with the wall?

Mr. Lyon: That is objected to on the ground that the witness is in no way qualified to answer the question.

A. There is not, because it shows that there was a sheaf of mud deposited on the outside.

Q.612: Do you see any of the ends of the scratchers appearing through the billet?

Mr. Lyon: That is objected to as immaterial, as to whether this witness can see them or not.

A. There is no indications of any of the scratcher fingers appearing visible through the billet.

Q.613: Is there any indication on that billet where the scratcher changed direction in its reciprocation? A. Yes, there is.



(Deposition of J. E. Hall, Sr.)

Q.614: How is it marked?

A. With an arrow.

Q.615: How many places are marked?

A. Two places.

Q.616: Had the scratcher rotated at the point indicated by the lead lines or arrows marked "Barkis," what would have actually occurred or been built up on the billet at those points, had the wires reached the [2647-162] surface of the well bore?

Mr. Lyon: That is objected to as a compound, complex question and incompetent, irrelevant and immaterial, and on the further ground that the witness is in no way qualified to answer the question.

A. If the wires had reached the bore of the well, there would have been an even cleanness of deposit, so that the cement would be deposited around the point of reversal, but at the point of reversal, you will notice that the cleanness of the mud was of a much lesser degree than in the main part of the travel. In other words, it was only just little stringers of cement, and the balance was mud. There wasn't a cleaning job there perfected.

Q.617: Does the cement build up where the greater cleanness takes place, or does it build up less?

Mr. Lyon: Same objection as to the preceding question.

A. It builds up more where a greater cleanness, because the scratcher finger will set up a circulation

(Deposition of J. E. Hall, Sr.)

of the mud, and cement will move in and take its place, and those broken places and in the lines between the lines of the cement was where mud was deposited, which was not cleaned away; so, should they have rotated, those lines would have been cleaned away. If there [2647-163] would have been any of them left, there would have been some indication of spiral angling lines for some portion of the travel.

Q.618: Can you explain why there weren't circumferential collars of cement formed at those reversal points, if they rotated at that point, if the scratcher rotated at those points?

Mr. Lyon: That is objected to as leading and suggestive, and incompetent, irrelevant and immaterial, and further that the witness is in no way qualified to answer the question.

Mr. Scofield: Read the question.

(The reporter read the question.)

A. I cannot explain why. I can explain why it would be cement there, and is there, is a positive indication that the scratcher only came down and traveled back upward in its same road of travel.

Mr. Lyon: I move to strike the statement of the witness as not responsive to the question.

Q.619: Which scratcher did the best job of cleaning? And I would like to have you to distinguish, first, between the scratchers shown in Exhibit F and Exhibit G, referring to the billets that were

(Deposition of J. E. Hall, Sr.)

formed, which are Exhibit K and Exhibit H, respectively.

A. Exhibit K has indications of a good cleaning [2647-164] job; Exhibit H has indications of a poor cleaning job.

Q.620: So between H and K you think that the better job was done in the billet shown at K?

A. Yes, on Exhibit J——

Q.621: Now, let me ask you, as between the scratcher that is shown on Exhibit G, which produced the billet H, and the scratcher shown in Exhibit I, which produced the Exhibit J, which, in your opinion, did the best cleaning job?

Mr. Lyon: That is objected to as incompetent, irrelevant and immaterial, and on the further ground that the witness is not qualified to answer the question.

A. The scratcher that cleaned Exhibit J done a very poor cleaning job. That cleaning job was the poorest of the three. In other words, it shows that there is more mud left in between the stringers of cement than they have got cement. I would say that was no cleaning job at all.

Q.622: Is there any indication in any of the billets that were made by these scratchers that any of the scratchers rotated in the test?

Mr. Lyon: That is objected to on the ground that the witness is in no way qualified to answer the question, and it is incompetent, irrelevant and immaterial as to what this witness might consider an indication. [2647-165]

(Deposition of J. E. Hall, Sr.)

A. Absolutely not.

Q.623: Is it your belief that the tests made by Jones and Berdine simulated the conditions actually existing in a well?

A. Absolutely not. [2647-166]

\* \* \*

Q.626: Did you hear the testimony of Mr. Doble given during his deposition given in California?

A. I did.

Q.627: Did you hear his testimony with respect to the test machine that is shown in the photograph, Petitioner's Exhibit KK? A. I did.

Q.628: In your opinion, was the test made on that test machine a proper test or an improper test for the determining of rotatability of the scratchers?

Mr. Lyon: That is objected to on the ground that the witness is in no way qualified to answer the question.

A. It was an improper test.

Q.629: Why?

A. Because the scratchers was run to a diameter not comparable to being found in a well [2647-167] bore, comparing a scratcher bristle length to a well bore.

Q.630: Do I understand you mean that the conditions that were used and employed in the test machine were not comparable to those existing under actual conditions in the field?

Mr. Lyon: Same objection as to the preceding question.

(Deposition of J. E. Hall, Sr.)

A. Absolutely not. Of all the scratchers I have seen run and of all the literature that I have saw, both of B & W and other manufacturers and myself, have all stated that scratchers have to be run in a well simulating a diameter at least two inches to two and a half inches smaller than the O.D. of the bristles.

Q.631: And were any of the scratchers of a diameter two inches greater than the well bore that was used in the test machine?

Mr. Lyon: That is objected to on the ground that the exhibits speak for themselves, and it is incompetent, irrelevant and immaterial.

A. They were not. There were many of these tests run that the end of the bristles would not reach the well bore. May I call your attention to the term that was used in the deposition as a Morse code, where it showed a kind of dot-dash. That was where the bristles were not long enough to track steadily against [2647-168] the well bore, and they only tested them at various intervals.

Q.632: What do you mean by the Morse code dot-dash?

A. If you will check the depositions, you will see that that was an expression used in the depositions of Mr. Doble.

Q.633: I show you a photograph of the pattern of a scratcher, the wall cleaning guide, made upon the interior of one-half of one of the test machine cylinders, the exhibit being offered, the photograph

(Deposition of J. E. Hall, Sr.)

being offered, as Exhibit AAA-1; is that what you refer to—— A. That is correct.

Q.634: ——as this dot-dash Morse code pattern?

A. That is correct.

Q.635: What produced this Morse code pattern, as you have called it?

Mr. Lyon: That is objected to on the ground that the witness is in no way qualified to answer the question.

A. The only thing could have produced it was the finger was too short to reach the wall of the cylinder.

Q.636: If it didn't reach the wall of the cylinder, how would it have produced any pattern at all?

A. It was so close that it could only reach it at certain [2647-169] high spots.

Q.637: And did you ever see a scratcher used under actual well conditions of the diameter that was used in the test well in the California depositions of Mr. Doble? A. Absolutely not.

Q.638: Do you consider that the test well conditions which were used with the test apparatus shown in Exhibit KK were legitimate for the testing of scratcher reversibility or rotatability?

Mr. Lyon: That is objected to on the ground the witness is in no way qualified to answer the question and it is incompetent, irrelevant and immaterial as to what he may think.

A. The sizes used to make the test were not competent to make a test, and I am sure that there was no oil operators would use such a test as a test.

(Deposition of J. E. Hall, Sr.)

Q.639: Have you yourself attempted to duplicate well conditions and make a test to determine the reversibility of the scratchers that are here in controversy? A. I have.

Q.640: Have you produced such a machine?

A. I have produced this demonstrating can that demonstrates different sizes. I have also produced a machine that you can push scratchers through it, so that [2647-170] you can inspect them at simulated well sizes, as they are advertised in the different advertisements, and as are used in the various well sizes.

Q.641: When did you make this machine?

A. I don't have the recollection when the machine was made.

Q.642: Well, was it made before or after the depositions that were taken in California?

A. Well, this machine that I am talking of now was finished or altered afterwards to a portability situation.

Q.643: Did you have the machine before the depositions that were given in California?

A. Yes.

Q.644: Have you made tests on scratchers with it? A. I have.

Q.645: And how did you alter that machine after the California depositions?

A. By taking an engine off of it and putting a motor on it; by making certain platforms that you could stand on, and putting aluminum on it so it



(Deposition of J. E. Hall, Sr.)

could be light and could be handled and be carried around.

Q.646: I show you a photograph, and I will ask reporter [2647-171] to mark it as Applicant's Exhibit 60 for identification.

(The photograph referred to was marked as requested, Applicant's Exhibit 60.)

Q.657: Tell me what that machine is?

A. That is a machine built to put devices through a well casing, a test machine, principally, built for testing scratchers and centralizers.

Q.648: On the top of the machine there appears a sleeve and a ring. What are they?

A. That sleeve and ring——

Q.649: Describe what the sleeve is first.

A. The sleeve is a sleeve representing the casing. The scratcher will go over that sleeve.

Q.650: What is the ring?

A. The ring is put on on the upper end of the sleeve opposite from the lugs that you can see on the sleeve, to pull the scratcher in the hole, and the lugs will push them out. That sleeve is put on between those two plates and the two plates is farther apart than the length of the sleeve was. The sleeve has a free-flowing, simulating the movement that can be had with the casing, to flow around to the side of the well. It can turn, it can do anything that casing can do. [2647-172] The only thing that will be lacking there will be the stiffness of casing, which will be a little harder to turn and a little more abusive. Op-



(Deposition of J. E. Hall, Sr.)

erating this machine would probably not be as hard on a scratcher as actual use of a scratcher on a casing.

Q.651: Now, you have stated that there are two disks, one above and one below the sleeve and ring. What is the purpose of the upper disk, which lies in a horizontal position immediately above the ring and sleeve?

A. The purpose of the upper disk is to pull the part representing the casing down through the outer casing or a well bore. The bottom disk is to push it out so that through the two you can have reciprocation.

Q.652: And what reciprocates this sleeve or disk? What reciprocates the sleeve?

A. A shaft pulled by a hydraulic cylinder in the bottom.

Q.653: What is the cylindrical object which is vertically positioned immediately below the sleeve and ring, long, cylindrical object? A. This?

Q.654: Yes.

A. That is a piece of casing of a well diameter size that a scratcher or the tool should be [2647-173] run into.

Q.655: What does that particular cylinder simulate?

A. It simulates the casing in a well bore with a round cylinder.

Q.656: What is the wide plate which is immediately below the cylinder just referred to, and down two or three feet?

(Deposition of J. E. Hall, Sr.)

A. That is a platform, which you can stand on to observe the movements that the device that you are testing has.

Q.657: What is the object that extends out radially at the bottom, from the bottom plate, and seems to be mounted on the bottom plate?

A. An electric motor.

Q.658: And what purpose does that serve?

A. The electric motor pulls the pump, and the pump draws the hydraulic cylinder, the hydraulic cylinder reciprocates the test.

Q.659: I show you a second photograph, which I will ask the reporter to mark as Exhibit 61 for identification.

(The photograph referred to was marked as requested, Applicant's Exhibit 61.)

Q.660: What was the purpose of taking this photograph, [2647-174] Mr. Hall?

Mr. Lyon: That is objected to as immaterial, what his purpose was.

A. Showing the simulation of the parts where the scratcher goes on, as they are installed when the scratcher is put on.

Q.661: Has the sleeve now been mounted between the two disks? A. It has.

Q.662: Is the ring in position? A. It is.

Q.663: And what is the object immediately above the top of the upper disk, which is not shown in the former photograph?

(Deposition of J. E. Hall, Sr.)

A. Above the upper disk?

Mr. Lyon: That is right, point it out, Tom; you might better testify.

A. Above the upper disk, all that would be shown would be a nut that screwed on top of the plate to hold it on.

Q.664: What is the purpose of the nut?

A. The purpose of the nut is so that you can take the device off and change the size and change equipment for installing the tests, and purposes for simplicity. It holds the mechanism in [2647-175] place.

Q. (By Mr. Lyon): You found the nut when Mr. Scofield pointed it out to you, didn't you?

A. Well, I designed the thing and had it put on there myself.

Q.666: Just answer the question: You found it when he pointed it out on the picture?

A. I was trying to arrive at the figure of what he was talking about.

Q.667: So he pointed the nut out to you, didn't he?

A. Well, he pointed to the upper part.

Q.668: (By Mr. Scofield): After the sleeve and ring are mounted in the manner shown in Exhibit 61, is the sleeve rigid between the disks, or is it movable?

Mr. Lyon: That is objected to as leading.

A. It is movable. As I explained a while ago, it is movable to simulate the moving of casing floating from one side to the other, or it can rotate.

(Deposition of J. E. Hall, Sr.)

Q.669: How long a stroke does this device have?

A. Oh, in inches I would say about thirty inches.

Q.670: And how is the device driven?

A. Driven by electrical motor, and by the electrical motor drives a pump, which in turn upon hydraulic pressure or oil or with a lever reciprocates the [2647-176] cylinder, which in turn reciprocates, carrying the device or the tool.

Q.671: I show you another photograph, which I request the report to mark as Exhibit 62 for identification.

(The photograph referred to was marked as requested, Applicant's Exhibit 62.)

Q.672: What is shown in this particular photograph, Mr. Hall?

A. That is the upper end of this test device that we have been talking about, and installed on the device is a B & W wall cleaning guide.

Q.673: I show you another photograph, which I request the reporter to mark as Applicant's Exhibit 63.

(The photograph referred to was marked as requested, Applicant's Exhibit 63.)

Q.674: In what position was the device when this photograph was taken?

A. The device, the wall cleaning guide, was just being pulled into the cylinder while the photograph was taken. The cylinder was stopped and held. The device is partly entering into the cylinder.

(Deposition of J. E. Hall, Sr.)

Placed on top of the device, a ruler, which can easily be readable to anyone, the outer diameters of fingers [2647-177] and the inner diameters of the simulated well bore, or the pipe, and also the diameters of the collar, or anything that they want there. In other words, the sizes. This was done so that the sizes could be easily discerned.

Q.675: How much greater in diameter was the scratcher than the well bore or the cylinder?

A. Oh, approximately an inch and a half, an inch and three-quarters, as bristles vary a little bit.

Q.676: I show you a photograph, which I will ask the reporter to mark as Applicant's Exhibit No. 64.

(The photograph referred to was marked as requested, Applicant's Exhibit 64.)

Q.677: State the position that the device was in when this photograph was taken.

A. The device, the scratcher had been pulled to the bottom of the cylinder, the cylinder turned toward the top, and where the photograph could be taken to show that there is no reverse in the bristles.

Q.678: In operating this device with a B & W wall cleaning guide, can you stand on the platform and look into the top of the cylinder, while it is being reciprocated? A. You can. [2647-178]

Q.679: Can you see whether or not the bristles or wires reverse during reciprocation?

A. You certainly can.

(Deposition of J. E. Hall, Sr.)

Q.680: I notice on these last two or three photographs there is a marking on the exterior of the cylinder, and also on the scratcher itself. Why was that done?

A. That was done to determine that the thing rotated.

Q.681: I show you a photograph, which I will request the reporter to mark for identification as Exhibit 65.

(The photograph referred to was marked as requested, Applicant's Exhibit 65.)

Q.682: Can you tell me what this photograph depicts?

A. Yes. I would like to make a correction on the other picture. This is the photograph where the scratcher was going to be pulled in and returned. The other picture is where there was inserted a ring, an obstruction. It is just being pulled through that ring and obstruction. That is the one marked Exhibit 64.

Q.683: What was the purpose of putting the obstruction ring inside of the cylinder?

A. For the purpose of collars, obstructions in [2647-179] well bores of small diameters, to pull the scratcher toward you or to push it back, to see the effect upon it, the reversibility.

Q.684: Did you make a test for rotatability of the wall cleaning guide which is shown in any of these photographs which you have before you and which are marked Exhibits 62 to 65, inclusive?

A. I did.

(Deposition of J. E. Hall, Sr.)

Q.685: Did you find, or were you able to determine, whether the B & W wall cleaning guide rotated upon reciprocation in this test machine?

Mr. Lyon: That is objected to on the ground that the witness is not qualified to answer the question.

A. I was able to determine that it did not rotate.

Q.686: Were you able to determine from the tests made with the B & W wall cleaning guide whether the wires of the wall cleaning guide reversed upon reciprocation?

A. They did not reverse.

Q.687: What did they do?

A. As you pushed them in, they taken a radial backward, lay down backwards toward an upward position and the bend in the end of the springs, near the end of the springs, slid on the casing. They only slid up and down. [2647-180]

I also taken the standard size of casing for that size of scratcher with another simulated piece of pipe, with a collar in it, a regular joint of pipe. They also slid through that and did not reverse. So I am convinced with the various tests and knowledge I have of scratchers, it was designed not to reverse.

Q.688: What was designed not to reverse?

A. The wall-cleaning guide.

Q.689: Do you think that this wall-cleaning guide would reverse in an open well bore if the wires were sufficient or if the wires extended to a rough surface and were reciprocated in a well bore,

(Deposition of J. E. Hall, Sr.)

that had the natural friction exposed to the ends of the wires?

\* \* \*

A. Yes, I believe they would reverse, but not all at one time. They will only one or two wires would reverse in a manner, and roll up, and that possibly accounts for the scratcher being deformed as it is run into a well bore and pulled out.

Q.690: Did the wall-cleaning guide reverse in this particular test machine?

A. No, sir, it did not. I made various attempts, probably used fifteen or twenty scratchers trying to [2647-181] make them reverse, and I never could get any reverse whatsoever.

Q.691: Now, after the collar was put in the top of the cylinder as shown in Exhibit 64, did you obtain reversal with the use of that collar?

A. Yes, sir, it turned reversal of the biggest portion of the bristles, but still some of them slid back through and even jumped that, and they did not go in reverse. [2647-182]

\* \* \*

Q.711: How did that compare with the test machine that you saw in California upon which tests were made by Mr. Doble?

A. Well, in the test machine, the operations he was trying to carry on there was the scratcher outer diameter was many of the bristles was even smaller than the cylinder, or near about, and in this case is a well simulated size; ordinarily some of the



(Deposition of J. E. Hall, Sr.)

sizes that are popular in running scratchers in wells. However, there is many more smaller sizes. We only made a well bore where the growths being that the scratchers have to reverse in, and this is among the popular sizes.

Q.712: Why did you select the size scratcher that is shown here in Exhibit 68 and this size well bore in preference to something else?

A. Because there were two sizes of scratchers that possibly or evidently are about 84 per cent of all business is in those two sizes, and this happens to be one of the two sizes.

Q.713: You haven't answered the question.

A. That was why we selected these sizes, because they are very popular in well operations, and have [2647-187] been popular in our advertising, popular in their advertising of B & W.

Q.714: Yes, I understand that there are certain popular-sized scratchers, but my question was directed to why you selected this particular size scratcher with this particular size well bore?

A. Because that was one of the standard major operations that we have, and it is one of the functions, it is one of the most important functions that the scratcher has to go through, and there is no use of selecting some size that wouldn't be within the range of the operation of the scratcher in the well bore. There is no use showing the minimum function, so this is the maximum. That is the thing we figure a scratcher has to do in being run in an actual job.

(Deposition of J. E. Hall, Sr.)

Q.715: Is this size scratcher that is shown in Exhibit 68 a conventional type, normal type of scratcher that is used in a well bore of the size of this cylinder?

Mr. Lynn: That is objected to as leading.

A. That is correct. That was why it was selected.

Q.716: I notice in this drawing, and it appears also in the preceding drawings, there are some pipe-like projections extending out radially from the cylinder. What is their function? [2647-187-A]

A. They have a function that when we desired to make another test we put another ring in, and those only screwed into place at that time to hold the ring, a ring simulating the distortion in a well bore.

Q.717: And where is that ring located when it is applied to the cylinder?

A. On the inside of the cylinder.

Q.718: In the top?

A. Yes, that ring is shown in one of the other pictures that is in exhibit here.

Q.719: I notice in this Exhibit No. 68 that the lower scratcher wires are slightly upturned, or considerably upturned and lie along the rim of the cylinder, do they not? A. That is correct.

Q.720: They appear to cross the row of wires above; is that a normal way in which the scratcher enters the cylinder?

A. That is the normal way in which the scratcher enters into the bore of the well, but that is not a normal position for it to be in. As quick as the

(Deposition of J. E. Hall, Sr.)

scratcher enters into the upper row, it is extended at the same plane that the others are, so that they are not even close together. They take the same position as the bottom ones take.

Q.721: Do I understand your testimony to be that as [2647-188] the scratcher is lowered into the cylinder, that the upper row will assume a like angle? A. That is right.

Mr. Lyon: That is objected to as leading.

Mr. Scofield: I will ask the reporter to mark the photograph as Applicant's Exhibit 69.

(The photograph referred to was marked as requested, Applicant's Exhibit 69.)

Q.722: You have before you the photograph, Applicant's Exhibit 69. State what is shown there.

A. There is shown a scratcher on the upward travel. What indicates it on the upper travel, as it was stopped the bottom row of scratcher fingers are pointed downward, and that is after some reciprocations have been made, and the chalk mark that registered with the mark on the cylinder in Exhibit 68 is turned back to the left, is turned away from the way the scratcher bristles bend, and this is the direction that the scratcher rotates when the cylinder is thrown in reverse.

Q.723: Is the lower row of wires in the cylinder or outside the cylinder in Exhibit 69?

A. The lower wires are in the cylinder in Ex-

(Deposition of J. E. Hall, Sr.)

hibit 69 on the upper travel; the upper wires have been pulled out of the cylinders. [2647-189]

\* \* \*

Q.735: Now, you have got us to the point where the bristles work in the wall of the well and ratchet, as you call it, the collar. Now, what follows?

A. As they ratchet the collar, at that time, as they ratchet the collar around, the bristle then is in a horizontal position.

Q.736: Let me ask you also, Mr. Hall, does that ratcheting that you have referred to take place at the [2647-195] top of the stroke or as your casing is let down, or in some other direction?

A. No, the ratcheting takes place after it has reached the top of the stroke. The reversal movement is begun, the reversal movement has to come in, there is no ratcheting in just pushing it to the top of the stroke and stopping it; it is when the reverse comes in, part of the travel. [2647-196]

\* \* \*

Q.742: Do I understand you to say that the collar passes through the wires?

A. It passes through all the wires; they are in a circumference on the outside of the collar.

Q.743: Isn't there any tendency for these wires to tangle as this collar passes through the two rows of wires?

A. As they are spaced on the collar, a distance apart, and the fingers, the springs, are spaced up

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straight, [2647-197] and they take the position of the bore of the well, each finger has a position to travel in. It doesn't touch the other one at all.

Q.744: Do they at all times clear each other, to your knowledge?

A. No, sometimes there is irregularities. Irregularities will be to an extent that I could not explain that. Irregularities may come in and destroy an entire finger, or something like that. Due to the fact that multiplicity of them, you can lose a few of the fingers and still have fingers on the [2647-198] collar.

\* \* \*

Q.751: Do you think there was any rotation at all by Jones and Berdine?

Mr. Lyon: That is objected to as calling for a conclusion of the witness, as incompetent, irrelevant and immaterial.

A. I testified yesterday and analyzed their cylinders, and I did it many times and I have run many, many experiments on those. I can't find any indications, and all indications point that they do not rotate, and I would be willing to discuss it with anyone that could show me a point of rotation, because I would like to find them myself if it is there. [2647-201]

\* \* \*

Q.761: Did you detect any of that spiraling action in any of the billets that were made in the Jones and Berdine tests?

Mr. Lyon: That is objected to as leading and

(Deposition of J. E. Hall, Sr.)

suggestive and incompetent, irrelevant and immaterial.

A. I couldn't detect either type of spiraling action. I might state that the spiraling action of the travel [2647-203] of the scratcher is not the spiraling action that I have been very much concerned with. The natural thing that comes with the reversible scratcher is the ratcheting action. Anything can cause a pipe to turn on a travel, but the ratcheting action which it has with this type of scratcher only when it has a pivot at this collar, and it pivots on the well bore. [2647-204]

\* \* \*

Q.816: Did you hear your son, John, testify with respect to the trips made to the Union Oil Company, where he visited Mr. Phil Jones during the year 1941? [2647-225]      A. Yes.

Q.817: What is your recollection of the part that you took on those trips?

A. I have only one recollection, of going down to see Phil Jones on two occasions.

Q.818: Was that before or after the Jones and Berdine tests?

A. That was after the Jones and Berdine tests. One occasion was after the A.P.I. meeting in the spring.

Q.819: How do you fix that?

A. I went down to see Mr. Jones, to explain to him that the cement billet with the special centralizer made was of a certain round nature, and I

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calipered it, and there was a cut made where the pipe was in the center of the hole, and it was perfectly round, just as if it had been drawn and taken from that billet, and I went down and asked him if he had any objections if I used this—any of those cuts, in trips or sales efforts, to demonstrate what the centralizer done. I place that time as after the A.P.I. meeting, because the first of those papers were brought out at the A.P.I. meeting, and those papers was what attracted me, and I went after them. Another time I went to see Mr. Jones——

Q.820: Was that all that happened on that particular [2647-226] visit? I mean attempting to obtain his permission to use these cuts that had appeared in the paper?

A. No. My son John at that time carried the can in—we call it the can, one of these demonstrator cans—into their place where they have their offices, the building office. I forget the name of the street down there in Wilmington, a kind of research laboratory. There was several fellows working in there, and he carried this can in there and showed him a demonstration.

Q.821: Did you go in with him?

A. Yes; I was in there with him.

Q.822: Did you see him make the demonstration?

A. I did.

Q.823: In Jones' presence?

A. Jones was present. There were two or three

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other fellows present. I don't recall any of their names. [2647-227]

\* \* \*

Q.839: I show you a photograph of a scratcher, the photograph having been offered by the applicant as Exhibit 25. Can you identify the scratcher in that photograph?

A. Yes, I can identify the scratcher in this photograph, but I couldn't identify it if I didn't know exactly what it is.

Q.840: What is it?

A. This is a picture of one of the two scratchers that B & W made in duplicating my type of scratcher and sent to the Gulf Oil Corporation.

Q.841: How are the coils disposed to the collar in that scratcher?

A. They are set at an angle to the radii of the collar.

Q.842: You have already indicated that the attempts made by B & W to duplicate the scratcher shown in Exhibit Z were unsuccessful, have you not?

A. I certainly have.

Q.843: Can you account for the fact that they were able to duplicate the scratcher here that you sent to Gulf, or that they sent to Gulf? [2647-231]

Mr. Lyon: That is objected to as leading and suggestive, and entirely argumentative, both this and the preceding question.

A. Yes, I can account for the fact.

Q.844: How do you account for it?

A. As they are attempting to imitate my appli-



(Deposition of J. E. Hall, Sr.)

ation in the Patent Office, it becomes very advantageous to show something else different than the type of scratcher I have been making and selling before from Exhibit Z. The attempts that they have made to produce Exhibit Z are identical with the Patent Office drawings in my application file at this late date of the eleventh month and sixth day, 1945, in Serial No. 627013.

Q.845: Is that the scratcher shown in the drawing which is before you, marked Exhibits 39B and 39C?

A. It is. The production that they have made is identical with that drawing, and in corresponding to the two scratchers that they made and sent to the Gulf when the Gulf told them that they wouldn't use anything except my type of scratcher, so it looks to me like a rigged effort to produce this production that they did, to show what they were trying to prove.

Q.846: I show you a photograph of a scratcher which was offered by applicant as Exhibit 28. Can you [2647-232] tell me what that scratcher is?

A. Yes, there is one of my type of design or scratcher that they bought from the State Sales & Service.

Q.847: How do you identify it as one of your type scratcher?

A. Because I was there when they give the testimony that they had bought it and produced the bill, and I also inspected the scratcher when I detected what they had done to it.

(Deposition of J. E. Hall, Sr.)

Q.848: Are the scratcher wires down in that—were the scratcher wires of the scratcher which was produced by the Petitioner in California the same length as they were when the scratcher was bought?

A. No.

Q.849: How had they been altered?

A. When they had bought the scratcher, the scratcher wires were at a longer length, and they were all with corresponding lengths. They had altered it, as they so testified, by cutting the lengths off even, but I detected that the lengths were not even, as one of the major things that caused me to check on the scratcher. I detected that one row of bristles had been so changed as to be a reproduction of Serial No. 627013, filed the 11-6-45. The other row of bristles still had the cantered position that they originally had. The row [2647-233] where they had changed the canter in the bristles to a lesser degree in pitch, which the springs had to be longer to come out and make the same diameter, those fingers were made longer than the others.

They also caused that there thing to bend in the scratcher, which is different from its normal. Each row of spring fingers have a different pitch. The picture that they had taken, that they put in exhibit to show that the scratcher that they had bought from the State Sales & Service was a direct copy of the reproduction that they had made from Z, Exhibit Z, was on top, but turning the scratcher immediately over, it would make the scratcher hard

(Deposition of J. E. Hall, Sr.)

to detect that anything had been done [2647-234-239] to it.

\* \* \*

Q.851: Did Doble testify in California that he made that scratcher?

A. He certainly did. He didn't make it, but he altered it, under his instructions, and so had it bought under his instructions. I later heard Mr. Lyon come on and make a statement on record, since nobody else wouldn't admit the work on it, that he ordered it—that he ordered it done.

Q.852: I show you another photograph, which is Petitioner's Exhibit GGG, and which was offered by the Petitioner during the taking of the depositions in California. Can you identify that?

A. Yes, I can identify this as the same scratcher as Exhibit 28, only turned there in the position, in the manner, to resemble my Patent Office drawing in Application No. 627013, as that would meet the proof that I was making the type of scratcher that they have charged me that I made.

Q.853: Why do you think that they cut the wires to different lengths in the two rows of your scratcher shown in Exhibit 28? [2647-240]

Mr. Lyon: That is objected to as entirely immaterial, as to what this witness thinks; also objected to on the ground that it is a misstatement of fact.

A. The reason why that they have cut the bristles at different lengths is very plain, as to leave the scratcher in an upward position, so that it would be hard to detect that it had been changed, and so they

(Deposition of J. E. Hall, Sr.)

could turn it over and take the side where the coils are at a radii with the collar, and that the fingers come off at a tangent, and in order for the fingers to come off with a tangent, they would have to be at a greater pitch than the fingers where the coils are at an angle from the radii. So, therefore, they would have to have two lengths of bristles to come out to the same diameter. As this diameter was put into a cylinder, they had to show that the bristles would come out to the same length, so it was very necessary that they have two different lengths in bristles, because the bristles had to have—they had to have them at two different pitches. This looks to me like it was gotten that way with a considerable effort to engineer a rigged bunch of testimony to inquire what was attempted here. [2647-241]

\* \* \*

Q.861: Now, going back to this scratcher, Exhibit 29 which you have identified as the Nucoil scratcher, are the coils in that scratcher disposed to the collar in the fashion as the coils in the drawings 39B, Fig. 1?

Mr. Lyon: That is objected to as leading.

A. Yes. [2647-244]

\* \* \*

Q.863: I don't want to hear about the fingers. All I want to know is whether the coils themselves are radially disposed, or are they cocked or canted.

A. They are cantered.

Q.864: And this you have identified as the Nucoil scratcher?

A. That is correct.

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Q.865: Now, are these coils disposed to the collar the same, that is in a canted position, or are they something different than those coils shown in Exhibit Z? [2647-245]

Mr. Lyon: That is objected to as leading, grossly so.

Q.866: Are those coils in the Nucoil scratcher the same, or something different than as shown in your application, Exhibit 39B?

A. They are different. [2647-246]

\* \* \*

Q.874: I put before you a photograph in evidence as Exhibit NN, and in that photograph is shown a scratcher which was offered in California as Exhibit KK, that scratcher being a reproduction, ostensibly, of the scratcher shown in Exhibit I, which was one of the scratchers tested by Jones and Berdine. Do you recall during the California testimony that there was both a thin-wire scratcher of that type and a heavier gage wire scratcher produced?

A. Yes, the gage of this wire was stated, was 16-gage wire.

Q.875: In Exhibit 30 the test cylinder is shown in plain view with this Petitioner's Exhibit KKK laid upon the top rim. If that scratcher were reciprocated in the cylinder, would you consider it a fair test of the reversibility of that scratcher in the well bore of the well?

Mr. Lyon: That is objected to as entirely argu-

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mentative, as leading and suggestive, incompetent, irrelevant and immaterial.

A. No, it wouldn't give any point of reversibility, because it is too near the diameter, and a scratcher has to be able to go into the bore of the well [2647-248] through the smaller diameters. Where there are so many larger diameters for the scratcher to reach out to them, it is difficult to make a test. You should be showing some of the small diameters, or at least a diameter equal that of the casing that you are having to run into. Most casings are like  $5\frac{1}{2}$ , run into  $8\frac{5}{8}$ ,  $9\frac{1}{4}$  and those diameters. The scratcher wire then extended from  $11\frac{1}{2}$  inches to 2 inches beyond the well bore on each side, that would be a fair test. If such a scratcher had been pulled in in that test, with balls on the ends of those springs and with stiff joints where they come off the collar, I mean the various tests that I have made, they wouldn't have reversed; they would have only slid up and down the hole. They would have slid back up the hole.

Q.876: Would the conditions shown in Exhibit 30 give a fair test of the rotatability of the scratcher on reciprocation in the cylinder?

A. The rotatability—

Mr. Lyon: That is objected to on the ground the witness is in no way qualified to answer the question, and merely argumentative, based on false assumptions.

A. It would absolutely give no rotatability at the point of reversal. [2647-249]

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Q.877: Why?

A. Because the balls on the ends of the fingers are round, and they wouldn't stick to the bore of the well to pull it. They have to have quite a bit of holding to hold them so they will go in reverse. They would only slide, and where there is not enough tension, when the fingers are pushed in, the fingers wouldn't have enough upward direction in the reverse, which would be a very modular thing. In other words, if the fingers were sharp, there wouldn't be enough reverse to even pull it out of its own track.

Q.878: Did you hear any testimony in California given with respect to this same type of scratcher, tested—the same type of scratcher, that is the Fig. 26, Jones and Berdine scratcher—tested with the heavy wires? A. Yes.

Q.879: What tests, if any, were given with regard to the reciprocation of the heavy wires?

Mr. Lyon: That is objected to on the ground that the evidence speaks for itself in the record.

Q.880: Were heavy wire scratchers of the Jones and Berdine type tested, that had the heavy wires?

A. Yes.

Q.881: By Mr. Doble? [2647-250]

A. That is right.

Q.882: Did they rotate?

Mr. Lyon: That is objected to on the ground that——

A. He testified they did.



(Deposition of J. E. Hall, Sr.)

Q.883: Did he testify that the thin wires rotated?

A. That is right. I would like to point out that the thin wires, the small wires, 16-gage, in the single-finger wires, I have never saw a commercial scratcher use a wire that small.

\* \* \*

Q.884: What would be the difference in the action of the thin wires and the heavy wires in a cylinder of this sort, with the length of wire shown?

A. The difference, to suit Mr. Doble's position, where they did not have the coil spring at the base of the spring finger to cause—to allow for the pivoting action, where they have a rigid joint, and then the spring finger has to go into a bend or into a flex, the smaller the wire, the greater the distance of the flex travel, so they can use a [2647-251] little greater diameter than they could with a big wire, and it just wouldn't look so bad, and that is the only reason that I can see that they used the small wires instead of the big wires, and anyone can make a test on a wire, and they will see that what I have said is correct.

\* \* \*

Q.886: No, I am asking you whether the scratcher which is shown in Exhibit K, that is with the bent wires, that is the Fig. 26 scratcher tested by Jones and Berdine, was that ever produced by B & W?

Mr. Lyon: Of course it was. It is shown in the



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figure.

A. I don't recall it.

Q.887: Was it ever produced commercially and offered to the trade?

A. No, absolutely not.

Q.888: Do you recall that there was offered during [2647-252] the California testimony or deposition a thin-wire scratcher, Applicant's Exhibit 14, shown in Exhibit 31?

A. Yes.

Q.889: Was that a B & W scratcher or wall-cleaning guide type?

A. It was.

Q.890: The scratcher as shown laid into the upper rim of the test cylinder in Exhibit 31, is it not?

A. That is right.

Q.891: Would you consider the reciprocation of that scratcher in a cylinder of that diameter a fair test as to the reversibility of the wires, or the reversibility of the scratcher shown?

Mr. Lyon: That is objected to as entirely argumentative and incompetent, irrelevant and immaterial, what this witness might think.

A. Absolutely not. In this scratcher, I observed that there was quite a lot of play in the spring fingers, in the ribs that held them down, that wasn't normal to their scratcher, and that the wire that went around the spring for circumference was bent upward, so that it extended up against the slack part in the rib, that it had about  $\frac{1}{8}$  inch travel out at [2647-253] the outer end, and the scratcher was around a quarter of an inch in full diameter bigger than the pipe and was around  $\frac{1}{8}$  inch slack on each

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side, which would account for the quarter of an inch, so there would be no strain on a scratcher with a radial spring making a reverse at that point. I would say that would be no test whatsoever for a scratcher to be run as a commercial [2647-254] scratcher.

\* \* \*

Mr. Scofield: I would like at this time to offer the [2647-257] photographs that were marked for identification this morning, these photographs being those of the Applicant's test machine. I will offer them individually, or I can offer them in a group, perhaps, and if there is any objection, it can be made as an over-all objection. I offer in evidence the photographs Exhibits 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72 and 73, inclusive.

\* \* \*

Q.900: When you conceded priority to Mr. Wright in the original interference at the time of the settlement agreement, September, 1944, was there any concession made by you to the non-radial type scratcher?

\* \* \*

A. Absolutely not, and we compared them, and we discussed those four claims as being what was common to Mr. Wright's application and what was common [2647-258] to my application, and in Mr. Wright's application it was pointed out that the sidewise bristle was about all I had left with the coil springs to obtain the patent from, and that was

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the priority that was given to Mr. Wright, was on the type of a scratcher that those claims described, that would be common to both.

Q.901: There was a later interference declared upon an application of yours still pending in the Patent Office, and an application of Wright on claims that had been allowed to you, was there not?

A. There was.

Q.902: That interference is now terminated?

A. It was. The interference was terminated in 1950.

Q.903: During any time when that particular interference was being prosecuted, did Mr. Wright or his attorneys, to your knowledge, plead the prior public use of the Kelley well?

\* \* \*

A. There was no such pleading.

Q.904: During the time that that interference was prosecuted, and prior to the time it was terminated, did Mr. Wright, to your knowledge, or his attorneys [2647-259] bring up, mention or plead the Jones and Berdine public use?

\* \* \*

A. There was no such pleadings.

Q.905: What range of angularity of the wires to the collar assures reversibility?

A. That range would be governed by the flexibility of the pivot. If the flexibility of the pivot was zero, and you had to allow the spring to go more sidewise, the range could be much less. If

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you used five coils, you could use a less range of sidewise, and still the scratcher will reverse. The stiffer you make the pivoting joint, it is necessary to get some greater degree of sidewise—it is necessary to get a more sidewise degree, so there is several factors that enter into the necessary degree to cause the scratcher to reverse.

Q.906: Now, you have indicated in your former testimony that radial wires are not reversible, have you not? A. That is right.

Q.907: Now, I would like to have you give me what range from the radial wire to the wire which is tangent, that is with an angle of 90 degrees, what range is there there that will assure reversibility of [2647-260] the wires?

Mr. Lyon: I will object to the question as grossly leading, and particularly when accompanied by pointing with a pencil, a demonstration which can't be seen in the record, on a drawing, to the witness.

A. I would say that the most comparable range for reversibility, having a reach to the greater diameter, would be something close to 45 degrees.

Q.908: That is you think that the range of reversibility of the wires would be within about a 45-degree angle?

A. Yes. I might state something here for the benefit of those that are examining this, which is an absolutely true condition, that from the maximum diameter, that is the most outstanding position that the wires are made in, that when they run in a hole, that they are subject and perhaps will be pulled

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down to a degree, plumb on down to the collar, away on down below a tangent.

Q.909: If the wires extend from the collar tangentially at a true tangent, would the scratcher be reversible?

A. Yes. The only objection in a true tangent that I have found, you sacrifice too much of the length of your bristle, and in order to make a bristle long [2647-261] enough to get in—to reach the maximum, you have too much wire in the hole. That is, there is a question of sacrificing a point there. Where is the best?

Q.910: Tell me, if the wires were only slightly angled from the radial position, would the scratcher be reversible?

Mr. Lyon: That is objected to as calling for an opinion of the witness and as incompetent, irrelevant and immaterial.

A. Yes, but in that case you would have to have a sufficient reflexivity at its orbit.

Q.911: What do you mean by its orbit?

A. I mean where it comes attached to the collar, you have got to have more coils there than you would have if laid down to a different [2647-262] degree.

\* \* \*

Q.915: All right. Well, tell me now whether this scratcher shown in Exhibit 39A is a reversible scratcher?

Mr. Lyon: That is objected to as leading.

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A. It is a reversible scratcher, and perhaps close to the choice of the angle to set it, that it can be set. [2647-263]

\* \* \*

Q.923: Are the scratchers shown in Exhibit 39B and 39C reversible? A. Yes.

\* \* \*

Q.924: In reversing in the well bore, do the scratchers with the angularity shown in 39A and the scratchers shown in 39B and C function generally the same or differently? [2647-265]

\* \* \*

A. They function generally the same.

Q.925: Is the scratcher shown in Exhibit Z, which is the scratcher shown in the cut of the Oil Weekly, a reversible scratcher?

A. It is. [2647-266]

\* \* \*

Q.931: What was the invention that you wanted to carry on or continue from this first application on to the second and third applications which you filed?

\* \* \*

A. I wanted to carry on the invention that had to do with the reversibility of the scratcher, the invention of a coil of a means like a coil at the base of the finger and its setting at an angle so that it would reverse.

Q.932: Does the reversibility bear any relationship to the angularity of the wires?

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Mr. Lyon: That is objected to as leading and suggestive.

A. Yes. You have got to have the wires to a substantial degree of angularity for them to reverse, and [2647-267] they have quite a wide space after you start the reversing, until it gets down, the wire gets down, to the collar, it will still reverse.

Mr. Lyon: I move to strike the statement last made by the witness as entirely volunteered, not responsive to any question.

Q.933: Did you ever intend to admit in anything that has been filed in the Patent Office that the scratchers shown in the advertising Exhibit Z showed the scratcher structure which was the same as in the drawings of Exhibits 39B and C.

Mr. Lyon: That is objected to as leading and suggestive, and also as entirely immaterial, as to what he intended to admit.

A. No, I never did. The scratcher structure in Exhibit Z is not the type of scratcher that is in Exhibits 39C or 39B.

Q.934: Prior to November 6, 1945, did you or your company ever advertise a scratcher which was identical to the scratcher shown in Exhibits 39B and 39C?

Mr. Lyon: That is objected to on the ground the advertising is the best evidence, and this witness' testimony can't alter or vary that advertising.

A. The advertising never showed such a type of [2647-268] scratcher. I would like to state that almost all of the advertising continued throughout



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the period of the scratchers sold are photographs, so they will be a record of the actual scratchers that were sold during that period.

Mr. Lyon: I move to strike the latter statement made by the witness as entirely volunteered and not responsive to any question.

Q.935: In the decision of the Patent Office dated September 9, 1952, on page 31 there is the following statement, that is, the Patent Office has put upon you the requirement "that Hall at least be asked to explain the facts and circumstances surrounding the filing of this application," which is 627013, "in the manner and form in which it was filed, and to explain, if he can, the filing of an application with an oath." Have you attempted during this testimony to make such explanation?

A. I sure have. [2647-269]

\* \* \*

Q.936: Did B & W, or Mr. Wright, ever notify you on any occasion that the scratchers that you were selling to the trade functioned on the same principle as those that were furnished to Mr. Kelley when they were used on the Kelley well?

Mr. Lyon: That is objected to as leading and as incompetent, irrelevant and immaterial.

A. They have not.

Q.937: Did B & W ever notify you that the scratchers you were selling to the trade functioned on the same principles as the Fig. 26 scratcher that was tested by Jones and Berdine?



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Mr. Lyon: That is objected to as leading and suggestive and as incompetent, irrelevant and immaterial.

Q.938: I am referring to the scratcher which had been radial for a way, and then bent toward the ends, with the balls welded on the ends of the wires, or puddled at the ends of the wires.

Mr. Lyon: Same objection, leading and suggestive and incompetent, irrelevant and [2647-270] immaterial.

A. They have not.

\* \* \*

### Cross-Examination

And in answer to cross-interrogatories proposed to him by Lewis E. Lyon, Counsel for Petitioner, he says.

XQ.1: Mr. Hall, how long have you been dealing in [2647-271] patents?

A. To what extent, Mr. Lyon?

XQ.2: To any extent?

A. Forty-five years.

XQ.3: How many patents have you applied for?

A. I couldn't any more tell you than——

XQ.4: Has it been in the hundreds, or fifty or twenty-five, ten, one, or what?

A. Well, I would want to vary it; possibly a hundred.

XQ.5: How many patents have been granted to you? A. That I couldn't tell you.

XQ.6: Well, I have here a list of patents which

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are perhaps some of the patents that have been granted to you. Let's see. I will hand you soft copies of these patents. The first one I have in front of me at the present time is a patent of J. E. Hall, No. 2560692, granted July 17, 1951, on an application filed May 24, 1947. I will ask you if you were the J. E. Hall there mentioned as the patentee?

A. I am.

Mr. Lyon: I will offer this soft copy in evidence as Petitioner's Exhibit next in order, 5Q.

(The exhibit offered in evidence was marked by the reporter, Petitioner's Exhibit [2647-272] 5Q.)

XQ.7: The next patent I hand you is a patent, No. 2509922, granted May 30, 1950, on an application filed June 21, 1946, for cementing plug. I will ask you if you were the patentee of that patent?

A. I am.

Mr. Lyon: I will offer that soft copy of that patent in evidence as Petitioner's exhibit next in order.

\* \* \*

Mr. Lyon: I also hand you, Mr. Hall, a patent No. 23929146, granted January 1, 1946, on an application filed June 24, 1943, for drill pipe wiper. I will ask you if you are the patentee there named?

A. I am.

Mr. Lyon: I will offer this soft copy of this patent in evidence as Exhibit 58. [2647-273]

\* \* \*

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XQ.8: With respect to Exhibit 5Q, was the application for the patent involved in any interference proceeding?

A. At this time I couldn't tell you.

XQ.9: You don't know? A. I don't know.

XQ.10: Haven't you been involved in a lot of interference proceedings in your life?

A. I have been involved more than once.

XQ.11: How many more than once?

A. I couldn't tell you.

XQ.12: It is a great number?

A. No, I wouldn't say a great number.

XQ.13: Well, was it as many as ten?

A. I recall possibly three.

XQ.14: Any more than that?

A. That I don't know.

XQ.15: What are the three that you recall?

A. I recall the two that is in this—that I have had with Mr. Wright, one in 1950 and one in 1943.

XQ.16: And what others?

A. The only one I recall was one of [2647-274] the centralizers.

XQ.17: Which one was that? What was that? Who was that one with?

A. I believe it was, as well as I remember, it has been about twelve or fourteen years ago, or maybe fifteen years ago, Steps, et al.

XQ.18: Any others?

A. I don't recall at this moment.

XQ.19: Was the application for the patent, Ex-

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hibit 5R, involved in any interference while it was pending before the Patent Office, or after the patent issued?      A. I couldn't tell you.

XQ.20: Was the patent Exhibit 5S involved in any interference proceeding while the application was pending in the Patent Office, or after the patent issued?      A. I don't recall.

XQ.21: I hand you a further patent, No. 2392145, granted January 1, 1946, on an application filed May 29, 1943, for cement basket, and ask you if you are the patentee of the patent?

A. I am.

XQ.22: Was that patent involved in any interference, either the application or the patent after it was [2647-275] granted?

A. That has been ten years ago since this was filed, and I don't recall the prosecution of that patent at all.

XQ.23: I hand you a copy of a further patent, No. 2309897, granted February 20, 1943, on an application filed August 5, 1939, and I will ask you if you are the patentee of that patent?      A. I am.

XQ.24: Was the application for that patent involved in any interference while pending before the Patent Office, or was the patent, after granting, involved in any interference in the Patent Office?

A. I don't recall. That has been ten years ago.

XQ.25: I hand you a copy of a further patent, No. 2299978, granted October 27, 1942, and ask you if you are the patentee of that patent?

A. I am.

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XQ.26: Was the application for that patent involved in any interference proceeding while it was pending before the Patent Office, or in the Patent Office after the patent was granted?

A. I don't recall the prosecution of that; it has been eleven years ago. [2647-276]

Mr. Lyon: I will offer this soft copy in evidence as the Petitioner's exhibit next in order.

\* \* \*

XQ.27: I hand you a soft copy of a further patent, No. 2297956, granted October 6, 1942, for single duct hydropneumatic well tool actuator, and ask you if you are the patentee of that letter patent?

A. I am. [2647-277]

XQ.28: Was that application for patent involved in any interference proceeding while pending before the Patent Office or after the patent was granted?

A. I don't recall. That has been fifteen years ago since that was filed, and I don't recall it.

Mr. Lyon: I will offer the copy of this patent, No. 2297956, in evidence as Exhibit 5W.

\* \* \*

XQ.29: I hand you a soft copy of a further patent, No. 2270671, granted January 20, 1942, for applicator for elastic rings, the application being dated July 5, 1938, and I will ask you if you are the patentee of those letters patent? A. I am.

XQ.30: Was the application for this patent involved in any interference before the Patent Office?

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A. I do not recall the transaction of that; that has been fifteen years ago.

Mr. Lyon: I will offer this one in evidence as Exhibit 5X. [2647-278]

\* \* \*

XQ.31: I hand you a copy of a further patent, being No. 2763068, granted November 18, 1941, on an application filed May 15, 1940, for fluid motor, and I will ask you if you are the patentee of these letters patent? A. I am.

Mr. Lyon: I will offer this soft copy in evidence as Exhibit 5Y, this being patent No. 2763068.

\* \* \*

XQ.33: With respect to all these patents that have been offered, you took an active part in watching closely the prosecution of the applications before the Patent Office, didn't you? [2647-279]

A. Why, I taken an active part as far as to see that I got the merits that I was entitled to.

XQ.34: And you watched the amendments that were filed and claims that were drafted in each case, didn't you? A. Fairly well.

XQ.35: And you have been doing that for the forty-five years you say you have been dealing with patents?

A. No, there is possibly twenty-five years of that forty-five years that I didn't hardly know what a patent looked like, but I was doing a lot of development work.

XQ.36: So it is only during the last twenty years that you have been quite active in the prose-

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cution of patent applications before the Patent Office? Is that right, instead of for forty-five years?

A. You asked the question in any manner that I was connected with patents.

XQ.37: I am not trying to argue. I am just trying to get the facts. I am not trying to confuse you.

A. The first applications I attempted to file, along in '24 or '25, which I didn't file. The first application I filed that I recall of was somewhere in the thirties, around '35 or maybe before. [2647-280]

XQ.38: All right. For the entire period of time you have been watching very closely, as closely as you could, the prosecution of the applications in the Patent Office, and claims that you drafted, and prior patents that were cited against your applications, haven't you?

A. I have been following as closely as I could, but——

XQ.39: In several cases——

Mr. Scofield: Let him finish.

Mr. Lyon: Pardon me.

A. I say I have been following as closely as I could. There was a lot of things I have overlooked, because my library has been limited up until recently. It is not limited so bad now. [2647-281]

\* \* \*

XQ.50: I hand you a copy of patent No. 2258052, granted October 7, 1941, on an application filed January 15, 1940, and I will ask you if you

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are the patentee of this patent? A. I am.

XQ.51: Do you recall the application for this patent or the patent after its being issued, being involved in an interference proceeding before the United States Patent Office?

A. I don't recall the prosecution of this application, as it has been twelve years ago [2647-283] when it was filed.

Mr. Lyon: I will offer this copy of this patent in evidence as the exhibit next in order, which is 5Z, I believe.

\* \* \*

XQ.52: I hand you another soft copy of a patent, Mr. Hall, being patent No. 2229076, granted January 21, 1941, on an application filed January 21, 1948, and I will ask you if you are the patentee in this patent? A. I am.

XQ.53: Was the application for this patent, or the patent itself, involved in any interference before the United States Patent Office?

A. I do not recall the prosecution of this patent, because it has been fifteen years ago since it was filed.

Mr. Lyon: I will offer this last patent, numbered 2229076, in evidence as Petitioner's Exhibit 6A.

\* \* \*